

A
STUDY OF THE ENGLISH APOTHECARY

from

1660 - 1760

with special reference to the provinces

Juanita Gordon Lloyd Burnby

A thesis submitted for the Ph.D. of the University of London.

1979

University College London

**CONTAINS
PULLOUTS**

ABSTRACT

A study of the English apothecary from 1660-1760 with special reference
to the provinces.

Juanita Gordon Lloyd Burnby.

The suggestion is put forward that the apothecary of the period is under valued and that his true worth to the science of his day and to his community has been incorrectly assessed by medical historians. In this re-assessment the genesis of the apothecary and his relationship with other branches of medicine are described. His own contribution to the development of the general practitioner, pharmacist, and chemist is examined, as is his scientific contribution to the emerging disciplines of botany and chemistry as well as to medicine itself.

The problem of determining the type of work in which the apothecary of the day, in both London and the provinces, was engaged is discussed and a tentative conclusion drawn as to how it changed during the course of the century. His educational standards and the opportunities he had to obtain this education are important to the realisation of the apothecary's position, and some idea is garnered from contemporary letters and memoranda. The necessity for self-education is pointed out, which happily often resulted in many apothecaries retaining a keen interest in spheres not directly related to the winning of 'mere bread and butter'.

Monetarily his position was usually sound and an examination of the premiums paid for apprenticeship show that he belonged to the more favoured sections of the community. His status, both socially and economically, his background, associates and social life are investigated, and the lives of a number of apothecaries such as John Conyers, Thomas Bott and Lewis Dickenson, who have left us more of their documents than is usual, are examined in close detail.

The conclusion is drawn that the initial hypothesis is valid.

ACKNOWLEDGMENTS

I would like to take this opportunity to thank Miss D. Jones, assistant librarian of the Pharmaceutical Society of Great Britain, for the assistance she has given me far beyond the 'call of duty', and Dr. T.D.Whittet for his help and encouragement over the last twelve years. I gratefully acknowledge the work Miss P. Schocktee has put into the compilation of the thesis, and the kindness of Dr. J. Ridge and Mr. F.H.Rawlings in allowing me access to their unpublished research. Above all my thanks are due to my husband without whom this work would not have been possible.

NOTES

It should be noted that dates of days from the 1st January to the 24th March prior to 1752 are given according to the modern calendrical style, as if the year began on the 1st January.

INTRODUCTION

Numerous papers have been written on individual apothecaries, men of the calibre of Samuel Dale (1659-1739) or W.T.Brande (1788-1866) and apothecaries per se have warranted a small section in any book devoted to a general history of medicine, but there is no study in depth of the profession in the important years between the Restoration and the Act of 1815.¹ Still less has any work been done on the provincial apothecary of England and Wales. Pharmaceutical history until recently has commanded but little attention, and the major portion has dealt with that of London but as Trease has written, "To complete the picture we must study not only London records but those from the Continent and our provincial towns. Local pharmaceutical history is as yet a neglected field but one well worth cultivating. We may then obtain answers to such questions as how numerous were apothecaries in the provinces, and how did their training, practice and financial position compare with London colleagues. ... Material from a single county may seem trivial but collected and studied for the country as a whole it should add much to our present knowledge."²

This thesis examines the historical development of the apothecary, particularly in relation to the other medical disciplines of surgery and physic and the emerging practices of chemists and druggists. It is apparent that he was a man of several interprofessional contacts and that his expertise was valuable over a wide scientific spectrum, which thus led him into becoming deeply involved in the rise of the new medical and paramedical specialisations. The effect the apothecary had on the developing general practitioner, the druggist, both wholesale and retail, the chemist, both experimental and manufacturing, and the dispensing pharmacist is studied in detail.

As a man of science he played his part; he was intimately concerned in the Scientific Revolution and its long term after effects. His contribution to the fields of chemistry, botany and medicine are related and an evaluation attempted. Such apothecaries are inevitably well known. Their background, their life and work have to some degree already been investigated, and further facts are not difficult to elucidate, but the story is far otherwise with 'the ordinary run-of-the-mill chap', whose activities and position in his community have been but rarely scrutinised. The Thomas Botts of Coventry, the Lewis Dickensons of Stafford, and others of that ilk made no mark in the world of science nor in that of the arts, they were not members of any of the societies which were beginning to spring up, consequently until now they have not merited study, but they were the very men who formed the warp and woof of the apothecarial cloth in the busy market towns of England. Knowledge of their lives promotes an understanding and explanation not only of their training and expertise but of the community in which they lived. Their friends and relatives, their interests and because the Botts and the Dickensons have left us their account books, their practices are subjected to a searching investigation.

In order to place the provincial apothecary more firmly in his niche an attempt is made to determine his education, both generally and professionally, and to what degree he might be described as a 'man of culture'. Finally the important question of his status within his community, his financial position and social origins are discussed.

There is no doubt that if a close knowledge of the events of lives of these little known men can be discovered not only is it of human interest but it illuminates any study of their professional activities.

The conclusion would seem to be that as an individual and as a man fulfilling an essential rôle in his world the apothecary has been greatly under-assessed.

1. It was apparent in the early years of the nineteenth century that reform in both medical education and registration was needed. Agitation culminated in the Act of 1815 by which the Society of Apothecaries became responsible for the training and registration of the majority of medical practitioners.
2. F.N.L.Poynter (editor), The evolution of British pharmacy, London, Pitman Medical Publishing Co., 1965, presidential address by G.E.Trease, pp.11-16, see p.11.

A STUDY OF THE ENGLISH APOTHECARY FROM 1660-1760,
with special reference to the Provinces.

SECTION I

THE EVOLUTION OF MEDICINE

Introduction

In order to gain an idea of the apothecary's relative position in the world of medical practice it is necessary to trace, not only the evolutionary path of the apothecary himself, but also that of the physician and the surgeon. The three threads of physic, pharmacy and surgery did not, and could not, exist in isolation, and, in their efforts to gain freedom of action or supremacy over a presumed rival, they twisted and turned until they formed a complex and curiously intertwined braid.

The records of the three London bodies, the Grocers' (later Apothecaries') Company, the Barber-Surgeons' Company and the College of Physicians give a full account of their organisation and corporate life, their privileges and judicial powers; from them can be built up a picture of these surgeons' apothecaries' and physicians' lives. Nothing of the sort exists for the provinces. How far a parallel can be drawn between the men of the capital and those of the towns and country districts is difficult to determine. London had certainly great influence. It is known that the guilds of several cities, for example, Norwich and Salisbury, were modelled on the 'custom of London'. There is no reason to suppose that the implementation of the gild ordinances was anymore lax in York or Bristol than in London. The act of 1540 uniting the barbers and surgeons referred to the importance of London as a training centre.

Undoubtedly this city reigned supreme in the width of experience it could give to the young physician or surgeon, as it was the only one in the country to have hospitals of the magnitude of St. Bartholomew's or St. Thomas's.

The idea of nation-wide control was slow in developing. The universities of Oxford and Cambridge issued medical degrees and licences which gave the right to practice anywhere in the whole country but they had no system of inspection and enforcement or punitive powers for unlicensed practice. The act of 1511 covered the whole country and the churches organisational powers were made use of in visitations and archdeaconry courts. Occasionally the College of Physicians made vague gestures but it really had very little interest in the provinces. The most it had to offer was its extra-licentiate ship. The Barber-Surgeons' charter of 1629 stated that its licence held good throughout the realm, but it was the apothecary who was the first (1694) to actively petition for privileges for his fellow apothecaries who practised outside the metropolis. It was he who first developed ideas of co-ordinating the activities of a London body with those of the provinces, in the petitions of 1724 and 1748.

A curious fact emerges from a consideration of the historical development of the three branches of medicine. Each body fought continuously and tenaciously for its privileges and was apparently alert to any possible infringement of its rights, yet for much of the time these powers could never have been vigorously enforced.

The College gives the impression of being an arrogant body who rigorously excluded from the practice of physic those who did not

come up to its requirements, yet on 1 September 1664 it was decided to repair its fortunes and strengthen its authority by inviting practising but non-collegiate "grave and learned men holding the degree of doctor" to become honorary fellows. This did not happen on just the one occasion as can be seen from the first edition (1728) of Chambers "Cyclopaedia" which commented "The College are not very rigorous in asserting their Privileges; there being a great Number of Physicians some of very good Abilities, who practise in London etc., without their Licence; and are conniv'd at by the College"

The same situation can be seen in the Apothecaries' Company. In December 1746, "a great number of the Livery and Yeomanry" in a remonstrance to the court of assistants pointed out that there was a decline in the Society's membership. At the parliamentary hearing for the proposed bill of 1748 Charles Dancer, apparently without fear of retribution, said that he had practised the business of an apothecary fifteen years, but was not free of the Company. And why should he fear retribution when the beadle could say that he believed half of the current seven hundred apothecaries and chemists shops were kept by persons who were not members? A situation which must have built up over many years.

The conclusion would seem to be that the largely unregularised practice of medicine in the provinces in comparison with London and the suburbs was only a question of degree, and that the study of the provincial apothecary cannot be divorced from that of his brethren in the capital.

THE APOTHECARY

It is true that the London apothecaries did not obtain a charter and incorporation until 1617, but this is not to say that they were not practitioners of an ancient craft. The title 'apothecary' can be traced back in England to the thirteenth century, it was however not differentiated from the spicer of the period so that Trease has found it necessary to coin the phrase 'spicer-apothecary'.¹ He writes, "It must be emphasised that there was practically no difference at first between spicers and apothecaries, and that the use of the terms 'spicer', 'apothecary' and 'spicer-apothecary' implies no greater difference in function than is now met with between the British public's use of 'chemist', 'pharmacist' and 'pharmaceutical chemist'.² In order to prove his point he cites the case of Philip of Gloucester in the late thirteenth century who was termed 'speciarius' 18 times, 'le specer', 'especier' and 'le specier' 28 times, 'apothecarius' 24 times and as 'ypothecarius' 4 times. Similarly a mayor of York, John, was sometimes called 'spicer' and sometimes 'apothecary'.³

In the early Middle Ages the Latin word 'species' was applied to coins, spices or other wares of high value, thus the early spicer dealt in spices, crude drugs, prepared medicines and sweet meats, sugar, rice, dried and candied fruits, perfumes, dyes, alum and a few other chemicals, cotton thread, silk and paper, all substances which were likely to have been imported from the Mediterranean, and were of high value in relation to their weight. Another group of traders who dealt in many of the same commodities were the 'pepperers'. It is known that they were an organised body

as early as 1180 as the Great Roll of the Pipe for that year records that the "Gilda piperariorum" was amerced sixteen marks for having set up without a royal licence.⁴

Trease is of the opinion that the pepperers were primarily wholesalers and shippers, which explains why they were to be found in the sea-ports, in particular London, rather than in the inland towns. The spicers, on the other hand, were retailers but could nevertheless import spicery and export British products including wool. They also compounded medicines and Trease states, "Everything points to the evolution of the apothecary from the spicer and not from the pepperer."⁵

The early spicers were itinerant merchants selling to the royal and great baronial households which were continually on the move. There is mention of spicers, both in London and in the provinces, in the last quarter of the twelfth century,⁶ but in the next century the spicers sold from permanent shops which were the first English pharmacies.⁷ The first shop for which there is documentary evidence is that of Robert de Monte Pessulano (Montpellier) spicer-apothecary to Henry III who was granted a "seld with shops in the Chepe of London" in 1246, there he could prepare medicines, store spicery and make retail sales.⁸ It is interesting to note that the conditions of the royal apothecaries of the household of Edward IV are as carefully itemised as those of the royal physicians and surgeons. It is known from Robert's will in 1278 that this area of West Cheap was known as the spicery (spiceria) which indicates that this part of the city had been devoted to the sale of these commodities for some considerable time. Such districts

were not confined to London but were to be found in St. Albans, York, Oxford, Cambridge, Chester and Nottingham with names such as "The Spicery", "Spice Street", or "Pepper Street".⁹

Spicers also sold from booths at the great mediaeval fairs, where the spicery requirements for a whole year might be purchased.¹⁰

The pepperers having paid their fine to Henry II must have been thereby regularised, for they continued to trade and by the thirteenth century had risen to great power and wealth in the city of London. Men such as Andrew Bokerel and John de Gizors, pepperers, both became mayors of the City.¹¹ In 1316 in their ordinances they are described as "the good folks of Soper Lane of the trade of pepperers". One of these ordinances was concerned with the standards of their wares. It condemned:-

- 1) The mixing and adulteration of goods of differing quality and price.
- 2) The tampering with bales in order to deceive.
- 3) The moistening of spices and drugs to increase the weight, ginger, cloves, saffron, alum, being specifically mentioned.

The ordinances insisted that the vendor should have true uniform weights and that he should sell by the hundredweight of 112 pounds, and by the pound of 15 ounces, save for confections and powdered goods which were sold at 12 ounces to the pound.¹² This shows that the pepperers sold by both the heavy or avoirdupois weight and the troy or goldsmith measure.

The spicer-apothecaries occasionally used the Great Beam but more usually they resorted to the Small Beam which weighed at 104 pounds to the hundredweight. They dealt in not only spicery or fine goods, ginger, saffron, sugar, mace, etc. but also in other goods sold

by the pound such as silks and haberdashery which were weighed on the little balance.¹³

On 20 May 1345 (old style) 22 persons "carrying on the business of Pepperers in Soper's lane, Cheapside" met at the Abbot of Bury's, St. Mary Axe in order to form themselves into a trading organisation.¹⁴ It was known as the Fraternity of St. Anthony and was formed to meet a financial crisis connected with the failure of the Florentine firms of Bardi and Peruzzi in the January of that year.¹⁵ An examination of the 22 names has shown that at least one, Vivian Roger, was an apothecary.¹⁶ Trease suggests that this Fraternity brought together two earlier 'mysteries' that of the grocers (pepperes) and that of the spicer-apothecaries, which are known to have existed in 1328 when each appointed a number of representatives.¹⁷ He suggests further that the differences between the two were closely linked with the scales of weights which were used.¹⁸

In London there were two balances. The King's Great Beam and the Small Beam which belonged to the City. In the first case the appointment of keeper or weigher was long term in contrast to the second which was let by the year. The Great Beam, as the name implies, was used for heavy goods such as wax, rice, copper and tin for which the pepperers and cordors had the right to nominate the custodian for weighing by avoirdupois.¹⁹ The Woolmen, for a period were allowed to submit to the Court of Aldermen the name of the keeper of the Small Beam for troy weight.²⁰ A pepperer, Andrew Godard, was appointed keeper of the large beam in 1312; it was a lucrative appointment and was of great advantage to a company when one of its members was made custodian, so it was undoubtedly

regarded as a piece of successful diplomacy on the part of John Churchman, a grocer, when he obtained in 1383 from Richard II the joint custody with the City of the King's Beam for his own company.²²

The title 'grossarius' is first found to describe the pepperers in documents dating from 1310 and 1328, although its use was rare for many years to come.²³ Sometime between their grant of the keepership of the Great Beam and 1398, the Grocer/pepperer moved the beam from the customs' house to Bucklersbury where two of their number had been living at least twenty years earlier.²⁴

Powers of search over all spicer-apothecaries were given to the mystery of grocers by civic ordinance in 1386.²⁵ In 1393, a group of Genoese, Lucca, Florentine, and Lombardy merchants complained to the mayor and aldermen of London of the unjust mode of garbelling spices and 'other sotill wares', whereupon it was ordered, "that any merchant who should for the future sell spices or other merchandise belonging to garbellage, without its being first cleaned by a garbeller, chosen, accepted and sworn for that purpose, should forfeit the goods."²⁶ The Grocers Company having had the most experience with these goods was requested to recommend some member of their own body to the Court of Aldermen to fill the post, which they accordingly did. Thomas Halfmark was chosen and sworn garbeller of spicers by the City authorities. He was authorised to receive from the vendor 4d. for garbelling each bale and 1d. for 'pollicing' each piece of wax.²⁷ After garbling a mark was to be placed on each bale and the Common Weigher was not to weigh any bale or the wax unless it bore the mark of the garbler.²⁸

Like the keepership of the King's Beam the possession of the privilege of the garbellership was immensely profitable. A tariff of charges at the company's weigh-house for 1453 shows that nearly forty articles were then included: pepper, saffron, cloves, mace, grains of Paradise, cinnamon, ginger, long pepper, flower of alman, currants, tin, lead, galingale, drugs, woad, madder, alum, foil, horns, cotton, rice, cummin and anise, soap, almonds, wax, dates, sanders and brazil woods, vermilion, verdigris, salt-petre, brimston, red copper and flax, to name some of them. On weighing these articles the company received fees of from 1d. to 20d. according to commodity and weight, or whether packed in bale, cask, barrel or tun.²⁹

Another document gives a clearer idea of the drugs concerned, for it includes rhubarb, scammony, spikenard, turpentine, senna, dates, rosin, treacle, electuaries, syrups, waters, oils, ointments, plasters, powders, gums and all conserves and confections.³⁰

The grocers received their first charter in 1429 (7 Henry VI).³¹ Their third charter of 1448 (26 Henry VI) extended the company's oversight of drugs to those of the druggists, apothecaries and confectioners; the wardens could, not only enter their shops and impose fines, but could also seize the false goods.³² A patent of 1448 appointed William Westmale, Richard Hakedy and Thomas Gibbes, "wardens of the mystery of grocers in the City of London" to the office of garbellers.³³ They were empowered to garbel spices and merchandise in whatsoever hands they can find them, "as well in the towns of Southampton and Sandwich, as all other places within the Kingdom, as well within liberties as without, our city aforesaid of London only excepted."³⁴ Six years previously, in 1442, Richard Hakedy

had been appointed apothecary to Henry VI and had been termed the King's Garbler, his duties covering London, Southampton and Sandwich.³⁵ This however infringed the ancient rights of the City of London, so in 1448 the power of search, so far as concerned the City, was revoked.³⁶ A garbeller mutually acceptable to both the Crown and the City, such as Hakedy, royal apothecary and warden, had to be chosen.

The ordinances of the grocers enjoined the wardens, "to go and assayen weights, powders, confeccions, plasters, oyntments and all other thynges belonging to the same crafts" and to make a note of all shops which were found to be at fault.³⁷ In spite of known cases where this right of search was exercised, it is probable that the duty was but laxly carried out. During the reigns of Elizabeth and James I there were many complaints of incompetence.³⁸

Section ii of an act of Parliament of 1540 gave the physicians a right to search apothecarie's shops in London and district for faulty wares with the assistance of "the Wardens of the said mystery of Apothecaries within the said city", a right which was confirmed by an Act of 1553.³⁹ In 1562 the physicians promoted a Bill to give the College of Physicians the sole right of search but Parliament was prorogued and the Bill lapsed.⁴⁰ This narrow escape stimulated the court of the Grocers Company to make an order that the apothecaries, freeman of the company, were not to use any drugs, simple or compound, "or any other kynde or sortes of poticarie wares but such as shall be pure and perfyt good."⁴¹

The desire of the apothecaries to separate from the grocers became apparent in 1588 when they unsuccessfully petitioned the Queen

to give them a monopoly in the compounding and selling of drugs and medicines, at the same time accusing the physicians of compounding physic.⁴²

With the suspension of all charters and patents at the death of a sovereign, the grocers had to surrender their charter on the accession of James I for inspection. Herbert relates that in August 1605, "the new charter was read to the company in English by the clerk, when the whole of them with one voice and free consent gave great approbation and allowance thereof: and returned Mr Tipper, a member of the court, thanks for his great pains and talent in the business".⁴³ The following year (4 James I) the company was explicitly re-incorporated as "The Freemen of the Misteries of Grocers and Apothecaries of the City of London".⁴⁴

The apothecaries were still aggrieved as they had no representation on the governing body of the company and so, could not control their own 'mistry'.⁴⁵ By 1610 they were ready to promote a Bill to set up a separate company, the chief instigator being Gideon Delaune, apothecary to Anne of Denmark, James' Queen. The grocers not unexpectedly reacted violently and all the promoters, except for Delaune, appear to have collapsed ignominiously. The Bill made no progress after its first reading on 12 June 1610, but four years later in April the apothecaries once more made an attempt to gain their freedom. This time they petitioned the King. They pointed out the dangers which arose from unskilful persons making and selling" ... without restraint false and corrupt medicines in and about London ..."⁴⁶ The petition was well received and the law officers of the Crown, Sir Francis Bacon and

Sir Henry Yelverton, were instructed to discuss the matter with the King's physicians, Sir Theodore Turquet de Mayerne (1573-1655) and Dr. Henry Atkins (1558-1635). On 13 May 1614 it was recommended that the apothecaries should split off from the Grocers' Company because of "disorders ... many and great ... which wee doe impute partly for the want of skill in the Grocers concearning the Art of the Apothecaries, and partly to the disp[osi]tions incident to marchants and tradesmen rather to favour the Lucrative part of the trade of undersellinge than the true use thereof, by utteringe that, that is perfect and good," and added that the apothecaries would be more fittingly subordinated to the physicians than merchants and tradesmen.⁴⁷ As Sir Francis Bacon at least had no love of physicians this last well-worn and common denigration of trade may, with some degree of confidence, be laid at the door of Drs. Mayerne and Atkins.⁴⁸

The King accepted this advice and decided to incorporate the Apothecaries as a new company. The first draft of the charter was drawn up, signed by Atkins and Mayerne and 76 apothecaries, and submitted on 23 May 1614 to a comitia of the College of Physicians, where it was approved by a majority.⁴⁹ There were twenty clauses, nine of which were concerned with the control of pharmacy. The draft recommendations to be particularly noted were:-

- 1) There was to be no difference in status between Freemen who were wholesalers and those engaged in retail pharmacy.
- 2) Freemen should be relieved of civic duties.
- 3) Pharmacy should be controlled by the College of Physicians and the new company in the City and seven miles around.⁵⁰
- 4) Registers were to be kept of physicians licensed to practise

and of Freemen of the Company within that area.

- 5) That a London Antidotary was to be prepared by the College for the guidance of apothecaries, and that the compounding, wholesaling and retailing of the drugs listed was to be confined to apothecaries who were Freemen of the company.
- 6) That no apothecary should be allowed to practise unless he had undergone a seven year apprenticeship and been examined and approved by both the College and the Company, and furthermore granted a licence to keep a shop.
- 7) That all apothecaries shops in the area (perfumers and grocers excepted) should be inspected at least quarterly by the president and censors of the College and the master and wardens of the Company, either separately or in the company of each other.
- 8) That on the freeing of apprentices the president of the College was to be invited to attend at the apothecaries' hall.
- 9) No bylaws were to be made without the participation in their hall of the president and censors of the College.
- 10) That all Freemen of the Apothecaries' Company were to take an oath, which had seven separate clauses, viz.:-
 - i) They were to stock their shops with only those compound medicines which were to be found in the antidotary.
 - ii) They were to dispense only the prescriptions of registered physicians and to report unlicensed empirics.
 - iii) The apothecary was only to substitute an ingredient after consultation with the prescriber, or failing him, another registered physician.
 - iv) They were not to visit patients to give advice or administer

treatment except in urgent cases when no registered physician was available.

- v). He was not to supply cathartics, vomits, sudorifics, etc. without the knowledge of a registered physician; supply opiates, hypnotics or abortifacients without a prescription.
- vi) Nor was he to supply poisons, in particular mercury sublimate, prepared arsenic or orpiment without a signed prescription which was to be retained, or else the purchaser had to sign a poison register.
- vii) And finally mithridate and theriac were only to be prepared publicly under the supervision of the College and a private court.⁵¹

This draft contented no one unless it were the physicians.

The mayor and aldermen of the City were furious at what they regarded as a gross interference in their affairs and the grocers were naturally equally irate. Not even the apothecaries were happy. A few wished to stay within the Grocers' Company so continuing to enjoy membership of one of the most powerful companies in the City, whilst the seceding apothecaries were loud in their demands that they should not lose rank in the order of precedence of the City companies, and more practically that, like the physicians and the surgeons, they should be exempted from civic duties.⁵²

Notwithstanding this uproar instructions were issued on 24 April 1615 for a second draft for the King's Bill to be made, James making one concession to the City that the apothecaries were not to be exempted from civic duties. This second draft should have passed the Great Seal on 30 May 1615 but had to wait. The delay was partly occasioned by the objections of the grocers but

more particularly the trouble lay with the lord chancellors and one of the lords chief justice who objected to the royal prerogative of granting monopolies.⁵³ During this lull the Grocers' Company on 7 February 1616 "... committed to the Poultrie compter" Michael Eason, apothecary and brother of the Company, for supplying "... defective apothecarie wares ..." to Mr. Lownes the prince's apothecary. He was found to be "... very unfitt in making of compositions and confections, and insufficient and unskilful to deale therein ..." Their pained concern was not however for the danger to the prince but for the trouble which might have befallen the Company - especially at that critical moment.⁵⁴

A third charter was drawn up and finally passed the Great Seal on 6 December 1617. On the 15th the new court of assistants made the necessary oaths before the law officers and the King's physicians, the latter undoubtedly being much displeased because there were several notable omissions when compared with the first draft. The Freemen's oath was not laid down until June 1618 when it was completely emasculated. The apothecaries were not confined to the formulae of the antidotary, nor to dispensing only those prescriptions written by members of the College. Nowhere were they forbidden to give advice or medicine, the recommendations regarding registers were dropped as were restrictions relating to the supply of poisons.⁵⁵

Wall and Cameron are of the belief that Francis Bacon deliberately frustrated the designs of the College to make the apothecaries totally subservient to the physicians.

THE SURGEON

The origin and subsequent development of the profession of surgery is to be found in the craft of the barbers. Clark is of the view that "There was nothing incongruous in the ancient combination of these two crafts which have since drawn so far apart. There was something in common between the two. They both required good hands, and the line between the remedial and the cosmetic is never absolutely definite."⁵⁶

The earliest mention of the barbers is from 1308 when the barbers of London presented to the mayor and aldermen Nicholas Le Barbour as their supervisor. On admission he swore that he would scrutinise the whole craft and distrain upon any who kept brothels or otherwise broke the law.⁵⁷ Ten years later there is a reference to 'Le Cirurgeon' in the ordinances of Edward II in which the surgeon's function is mentioned.⁵⁸ Surgeons, named as such, first appear in the City records in 1354 when three of them were sworn before the mayor in order to give their opinions on whether a certain wound had been treated with sufficient care and attention by John le Spicer of Cornhill.⁵⁹

An Act of Edward III in 1363 ordered that each mystery was to elect two surveyors for the good governance of the craft,⁶⁰ and in the following year the ordinances of the aldermen of London required that each craft be governed by masters chosen from its members.⁶¹ Not only were masters of surgery responsible for investigating malpractice or excessive fees but in virtue of their trained skill they had certain civic responsibilities such as reporting all cases of wounding, or they were appointed to keep the City gates in order to prevent anyone entering who was suspected of bringing

in contagion.⁶² These extra duties, together with the fact that they were likely to be called to emergencies at any time, is the probable reason why the barbers were exempted from serving on juries and inquisitions in 1357.⁶³

On 3 February 1369 Master John Dunheved, Master John Hyndstoke and Nicholas Kyldesby were admitted as master surgeons of the City, whereupon they promised "to well and truly serve the people in their cures, to take of them reasonable fees, to exercise their mystery faithfully, to report to the Mayor and Aldermen any surgeons neglecting his patients", and to inform them of those "hurt, wounded or otherwise in peril of death."⁶⁴ South believed that these 'Magistri Surgici' were probably masters or aldermen of the Surgeons' Gild who were publicly placed in authority over their brethren.⁶⁵ The next time the admission of master surgeons is heard of is 1390. A similar promise was made but on this occasion they were "to make faithful oversight of all others, both men and women, occupied in cures or using the art of surgery, presenting their lack, both in practice and medicines, so often as needs be to the Mayor and Aldermen."⁶⁶

The Barbers' Company on 6 October 1375 in a petition to the Court of Aldermen said that " ... men barbers from Uppeland [i.e. outside the capital] little skilled in their craft come into the City from day to day, take houses and intermeddle with barbery, surgery and to cure other maladies, whereas they have not known nor ever were Taught how to do such things" In consequence they wished to be able to appoint two masters who would be empowered to prevent anybody practising until "they had been found able and skilled in the said art by trial and examination before

certain barbers of the City." The masters were also to oversee the tools belonging to the art.⁶⁷ The request was granted thus showing that surgery was recognised to be part of the craft of barbers. The fine for unrecognised practise was to be forty shillings.

The barbers became a livery company 21 years later.⁶⁸ It is known from a copy of the return to a writ of 12 Richard II (1388) which had required all the gilds in the kingdom to give details of the charters under which they claimed their privileges, that the Barbers' gild was governed by a master and surveyors, and that their ordinances were similar to those of other fraternities at both earlier and later periods, including quarteridge fees, distribution of alms, appointment of officers, fines for refusal to officiate and the maintenance of good order.⁶⁹

The long French wars are known to have advanced the techniques of the surgeons of the English armies, who on returning to England were determined to raise both their own status and that of their craft.⁷⁰ Clark dates the association of the Craft of Surgeons, a small elite group of seventeen members, to 1435, but Young and South were of the belief that this surgeons' fraternity can be dated back to at least 1369 when the master surgeons took their oath.⁷¹ They were a specialised body of men, not only amongst those barbers who also practised the simpler forms of surgery, such as tooth extraction and phlebotomy, but were superior to the ordinary surgeons too. They were never incorporated nor did they have a livery, nevertheless they existed for many years. In 1513 they petitioned Parliament to exempt them from serving in London or elsewhere on any municipal assizes, juries or enquiries, and from bearing arms as they were always 'on-call'; furthermore,

like the heralds on the battlefield, they were non-combatants. In consideration of these facts and because there were only twelve of them, the petition was granted.⁷²

Young suggests there was considerable ill-feeling between the two fraternities of the surgeons, and the barbers who also practised surgery.⁷³ He held the view that the ordinance of 1375 was in response to that of 1369, which in turn evoked the confirmation of the master surgeons in 1390. Whether this was so cannot as yet be proven but may possibly be supported by a petition of the Barbers to the Court of Aldermen on 7 March 1410.⁷⁴ In any case the results seem to have been unfortunate for in 1415 it was reported to the City aldermen, "that certain barbers ... inexperienced in the art of surgery very frequently take charge of sick and wounded persons with the intents of fraudulently acquiring their goods; whereby the sick were often worse off at their departure ... and on account of the unskilfulness of these barbers, were oftentimes maimed ..." The City decided that the Barbers' gild were in future to choose two of the wisest of the surgical faculty who were then in effect to act as supervisors and consultants in serious cases.⁷⁵ There must have been serious dissension within the company because, in order to start the procedure, the City " ... caused to be brought before them the name of every barber practising the art of surgery" and from them, after due enquiry, they chose two masters. The next day they swore " ... to superintend their brethren ... to spare no-one for love, favour, lucre or hate ... and present to the Chamberlain all faults detected."

In spite of good intentions the unruly barbers were not so

easily controlled. Just over a year later it was noted that those " ... pretending that they were wiser than the overseeing masters", refused to call them to consultation. They were now to be fined 6s. 8d. if they had not sought assistance in difficult cases within three days.⁷⁶

Clark is of the opinion that the surgeons stood socially higher than the apothecaries. The royal household of Edward IV (1471) held a master surgeon who had as an assistant a yeoman surgeon, two other helpers, a personal servant and was mounted. In fact his general status differed little from that of the physician who supervised the apothecary.⁷⁷ It would seem likely that these highly placed surgeons belonged to the unincorporated fellowship; it would be even more likely that they had nothing to do with the practice of barbery which would be carried out by a groom or gentleman of the bedchamber. The ordinary barber however refused to relinquish his old right to surgical practice and this was confirmed to him in 1451.⁷⁸

Edward IV in the first year of his reign (24 February 1462) granted letters patent to the Freemen of the Mystery of Barbers of the City, which received statutory recognition by Parliament in 1465.⁷⁹ In the recitation it is noted that they had for long been skilled in healing and curing wounds and other infirmities, as well as phlebotomy and tooth extraction, so in order to protect them and their patients from inexperienced practitioners they were given the right to elect two masters or governors who had power of search and inquisition throughout the City and for one mile around, over all barbers practising as surgeons and all foreign surgeons,

and that they should oversee what instruments, plaisters and medicines were used. Their exemption from service on juries and assizes was confirmed.⁸⁰ The provisions indicate that the craft at that time had everything to do with healing the sick and little to do with shaving or hair trimming. The charter was renewed by Henry VII in 1500 and by Henry VIII in 1512-3. Whilst there were only nineteen specialist surgeons in 1515 the Barbers' Company was large.⁸¹

The Act of 1511 - 3 Henry VIII

In 1511 was passed an act of Parliament which had far reaching results on the future practice of medicine in this country. The preamble relates that the Act had resulted from a petition but does not indicate who had initiated the petition. It states that the science and cunning of physick and surgery both require 'a great learning and ripe experience' but were being practised by many ignorant persons, and that 'common Artificers such as Smiths, Weavers and Women, boldly and accustomedly take upon themselves great Cures', and worse still, might use sorcery and witchcraft in the course of treatment.⁸² The main provisions enacted were:-

- 1) That within London and for seven miles around no person was to practise as physician or surgeon unless he were examined and approved by the bishop of London or the dean of St. Paul's, who were to be assisted in the case of physicians by four doctors of physick, and in the case of surgery by expert surgeons.
- 2) In the rest of the country aspiring surgeons and physicians were to be examined by the bishop of the diocese or the bishop's vicar-general, and they were also to call upon such expert people as they thought necessary.

The two universities already had the right to issue licences to practise surgery and medicine throughout the realm, and it was specifically laid down that the Act was in no way prejudicial to their privileges.⁸³ It is obvious that the conditions were less stringent in the sixteen provincial dioceses than in the capital, but the meagre numbers of suitably qualified personnel would make this necessary. It is not surprising that this system of licensing was brought under ecclesiastical control, as only the Church had an administration which, not only covered the whole country, but also carried out regular visitations. It was used at a later date to ensure that schoolmasters and midwives were the possessors of legally required licences.⁸⁴ The 1511 Act was followed two years later (5 Henry VIII, c.6.) by an Act which freed surgeons from serving on juries and as constables.⁸⁵

Another Act (25 Henry VIII, c.21) passed 1533-4, gave to the Archbishop of Canterbury powers to grant those licences which had in the past been obtained at the Court of Rome from the Pope.

Consequently the Archbishop had two separate licensing powers:-

- 1) That within his own diocese as covered by the act of 1511.
- 2) That which covered the whole realm under the act of 1533-4; these came to be known as "Lambeth degrees."⁸⁶

The earliest record of the implementation of the act of 1511 occurs in 1514 when 72 surgeons were licensed in London. The area covered was presumably not only London and the suburbs but the whole diocese of London which stretched into Middlesex, Essex and Hertfordshire, nevertheless the bulk of the surgeons must have been in the metropolis. There is no equivalent list for the physicians extant, and there is no further information until 1529.⁸⁷

As far as physicians and as far as London and environs were concerned the act of 1511 was superceded by the granting of the charter for a College of Physicians on 23 September 1518 by the King's letters patent, but insofar as the act related to surgeons or the rest of the country it was not repealed until 1948, although it had fallen into desuetude by the early eighteenth century.

The Acts of 1540

1540 is an important year in the history of English medicine because in that year two notable acts, 32 Henry VIII c.40 and 32 Henry VIII c.42 reached the statute roll. The latter dealt with the barbers and surgeons of the City of London and for a circuit of one mile around. The preamble of the Act does not begin with the recital of a petition and so it is not known at whose instigation the Act was brought into being. The earlier Acts are noted and particular mention is made of the importance of the London surgeons in training those of the provinces.⁸⁸ The act of 1540 merged the Barber-Surgeons' Company and the unincorporated surgeons into a single body under the name of the Masters or Governors of the Mystery and Commonalty of Barbers and Surgeons of London. It was set forth "that no person ... using any barbery or shaving, should occupy any surgery, letting of blood, or any other thing belonging to surgery, except drawing of teeth, and that whosoever should use the mistery or craft of surgery should not occupy the feat or craft of barbery orshaving."⁸⁹ There were to be four masters, two expert in barbery and two in surgery, the principal master being alternate years a surgeon and a barber.⁹⁰

No reason for this merger is given beyond the fact that it was regarded as necessary; possibly it was felt that only a large, fairly wealthy company would have sufficient power to supervise adequately the activities of those who practised surgery. It also enacted that only freemen of the Company could open barber's shops and that every surgeon must show a sign over his street door thus indicating where help might be obtained in times of emergency.⁹¹

The most important clause however was that every year the surgeons were to be allowed the bodies of four executed criminals for purposes of dissection, a course which had already been adopted in Scotland thirty five years earlier.⁹² The Company thus took collective responsibility for the education of their apprentices and the 'post-graduate' education of their members. This was something not carried out by other craft or merchant guilds of the City, not even by the twenty year old College of Physicians of London, but one that was quickly adopted by the Apothecarie's Society when it was formed in the following century.⁹³ A board of examiners was established to test the adequacy of the training of apprentices.⁹⁴

The Act of 1542 - 34 and 35 Henry VIII c.8

This Act has been nicknamed 'The Quacks' Charter' and with a certain degree of truth. The preamble placed the necessity for this Act fairly and squarely on the shoulders of the surgeons of the 'Company and Fellowship of Surgeons of London' (which was not its correct title), who had been too greedy for both power and money. They had harried and troubled those men and women who had tried to help their poor neighbours with their knowledge of herbs in cases of "sore breasts, pin and web in the eye, oncomes of hands, burns,

scaldings, sore mouths, the stone, strangury, saucefleme and morpew" without receiving financial reward. In future the Act provided that any subject of the King who had knowledge and experience of herbs, roots and waters by speculation (theory) or practice, in any part of the King's dominions might treat any outward sore, oncome, wound, apostemations, outward swelling or disease by means of any herb, ointments, baths, poultices and plasters. The only legal restriction was that unlicensed practitioners might not cauterise nor cut, nor prescribe internal medicines; from which it would seem operations for the stone and for cataract were not allowed.⁹⁵ No mention is made of the practitioners accepting fees or not but this was obviously felt to be the operative point in the popular mind.⁹⁶

Again the origin of the Act is unknown. It is interesting to note that the preamble does not refer to the act of 1540 but only to that of 1511, and that its provisions cover not only the metropolis but all England and Wales. Whatever sparked off this 'charter', it must have been obvious by this date that there were far too few physicians or surgeons to carry out the policy of the acts of 1524 (for physicians) and 1540 (for surgeons) in London never mind the provinces where the act of 1511 held sway.

The 1543 Act would seem to be an attempt to legalise the areas within which the traditional healers, using herbs known from 'time out of mind', worked, particularly in districts remote from the large towns. Dangerous operations involving incisions, the use of cautery or the administration of internal medicines were specifically excluded. The fact that the Act was abused is not so much a condemnation of the Act as of the lack of administration to ensure that abuse did not occur with impunity.

The Provinces

An Act of Edward III in 1363 made it obligatory for every man practising a trade to belong to a gild.⁹⁷ A year or so earlier a petition against merchants who 'engrossed all manner of merchandise vendible' resulted in the Act of 37 Edward III c.5 which laid down "That all artificers and people of mysteries shall each choose his own mystery before the next Candlemas; and that having so chosen it, he shall henceforth use no other; and that justices shall be assigned to inquire by process of Oyer and Terminer, and to punish trespassers by six months imprisonment or other penalty according to the offence." Women artificers were exempt from the Act.⁹⁸ The Act caused much protest and was repealed in the following year (38 Edward III c.2). Herbert however is of the opinion that it was only merchants and not 'men of mysteries' who were exempt.⁹⁹

Whatever the exact interpretation of these Acts it would seem that they led to the formation of mixed gilds in those provincial cities and towns which had too small a population to support a separate gild for each craft or trade. Sometimes there was some grouping of allied trades but this was by no means invariable.

York. The Fraternity of the Blessed Mary was founded in 1357 and became incorporated as the Merchant Adventurers' Company in 1581; it included mercers, grocers, apothecaries and ironmongers.¹⁰⁰

Bristol. The physicians, surgeons and apothecaries all appear to have been members of the Barber-Surgeons' gild.¹⁰¹

Canterbury. There was a fellowship of apothecaries, grocers, chandlers and fishmongers.¹⁰²

Newcastle-upon-Tyne. Apothecaries were to be found in the Company

of Glaziers, Goldsmiths, Plumbers, Pewterers and Painters, whilst the barber-surgeons were with wax and tallow-chandlers.¹⁰³

Chester. The apothecaries joined the Mercers' and Ironmongers' Company, to which at a later date were added the grocers.¹⁰⁴

The barber-surgeons, as at Newcastle, were joined with the wax-chandlers.

In several towns, notably Oxford, Leicester, Dorchester and Carlisle, the apothecaries were members of a large merchants' gild which contained many occupations.¹⁰⁵ The Gild of Merchants at Ipswich unusually included physicians.¹⁰⁶ In 1612 the Merchants Company of Salisbury was re-named the Grocers' Company and now included grocers, mercers, apothecaries, goldsmiths, linen-drapers, milliners, vintners, upholsterers and embroiderers. The barber-surgeons were united with the silkweavers.¹⁰⁷ Matthews writes that the Norwich gilds were organised on the basis of the London ones and used the same weights and measures sealed by the City.¹⁰⁸ An examination of the new constitution of the barber-surgeons of Salisbury in 1676 shows that their rules closely resembled those of London; widows were able to use their husband's trade as long as they remained widows and were allowed to keep on their husband's apprentice; anatomies were to be made, "for the better increase of the skill and knowledge among chirurgeons and barbers."¹⁰⁹

THE PHYSICIANS

During the Anglo-Saxon period there appear to have been two parallel lines of medical practice, on the one side was that of the 'leeches' who were laymen, and on the other monastic medicine.¹¹⁰ The early monastic orders clearly saw part of their function as healing the sick. There is a plan of a 'hortus medicus' of the monastery of St. Gall, Switzerland, dating from 830 AD which shows

sixteen herb beds and gives a list of the plants to be grown; the plan also includes a pharmacy and a house for physicians.¹¹¹ But Church Councils from 1131-1212 increasingly restricted the medical activities of the monks, and finally forbade them to practise, first of all outside the monasteries, and then within, where it became the work of the lay-brethren. As Trease points out, even though Henry III (1216-1272) banned clergy from practising physic, the prohibitions at this time did not extend to the secular clergy. Most of the royal physicians, then and later, were in fact secular clerics, e.g. John de Wyke, Geoffrey de Melton and John of Gaddesdon. Pope Gregory IX (1227-41) at a General Council of the Church issued a canon to dissociate the clergy from the shedding of blood in judicial or military affairs, and also forbade all sub-deacons, deacons and priests to exercise cautery or incision.¹¹² Thus the practice of medicine was divided into its two main branches, physic and surgery. It is not thought, however, to have been a completely new occurrence as such a division may have been in being in the days of Galen; indeed it has been suggested that it was at that period that the prohibitions against lithotomy was inserted in the Hippocratic Oath.¹¹³ There had been a number of lay physicians for centuries in the Middle Ages, and Clark believes that by the time of the early fifteenth century clerical physicians, " ... were not a dominant element in the faculty, though they were still more than a remnant of what they had been."¹¹⁴ It is reasonable to believe that the Pope's restrictions must have had the effect of increasing the number of lay people in medical practice.

Although it cannot be said definitely that the title of 'physician' in the late mediaeval period was reserved only for those who had studied medicine at universities it is generally thought that it " ... was not very far from its accepted meaning."¹¹⁵

Clark defines their function and activities, beginning with two negatives:-

- 1) They did not keep shops as did the apothecaries, partly because it was beneath their dignity and partly because, where the apothecaries were organised, it would have infringed their monopoly. Their dignity notwithstanding, it is known from Chaucer that many were not averse to sharing in the apothecaries's profit.
- 2) They did not use surgical instruments but regarded surgery as a method of treatment, believing it to be within their province to recommend and supervise it, even occasionally practising it.
- 3) They diagnosed and prescribed and practised uroscopy, on occasion, without actually seeing the patient. (Their advice was sought for patients who might live a hundred miles away and whom they never saw.)
- 4) They prescribed diets and wrote prescriptions for internal and external medication.
- 5) They administered remedies themselves or else more usually directed the apothecary.¹¹⁶

The course of a university trained physician ideally consisted of a minimum of thirteen or fourteen years:-

- 1) Four years study for a B.A.
- 2) Some three years more for an M.A.

- 3) He should then lecture at the university for a year or so before proceeding to a further degree.
- 4) This was followed by four years for an M.B., or else a licence to practise physic, an M.L.
- 5) If he wished to procede to an M.D., a further two years was required.¹¹⁷

Not surprisingly the number of these highly educated physicians was extremely limited. Figures do not exist but possibly an idea may be obtained by examining those which have been estimated for continental cities at a rather later period. Paris in 1500 is thought to have had 21, there were possibly 18 in Vienna in 1511 and 17 in Basel in 1557, whilst it is said the first one did not arrive in Bremen until 1519.¹¹⁸

In 1421 the House of Commons passed to the King a petition against unqualified practitioners of physic.¹¹⁹ The petitioners, though from whom it emanated is not known, wished to limit the practice of physic to those who were cunning men and approved sufficiently learned in art, philosophy and physic, having been for some years in the 'Scholes of Fisyk' within some university, and to be graduated either with an M.B. or M.D.; no women were to practise the art. The penalty was to be either long imprisonment or a payment of £40 to the King. The petitioners asked for a warrant to be sent to all sheriffs and to all practitioners of physic, ordering practising physicians to present themselves by a certain date at one of the English universities, where they would be examined. If they failed to pass then they were to be forbidden to continue doctoring until they were qualified. The petition was sympathetically received and the Lords of the Council were told to

supervise its recommendations, but the subsequent silence seems to indicate that there was no further activity.¹²⁰

Two years later (1423) another petition came into being, this time addressed to the civic authorities of London. On this occasion the area concerned was limited to the City and its liberties, and the petition did not refer to the whole country as in the previous one, but it included both physicians and surgeons. From the phraseology of the petition it is obvious that the physicians had already developed some supervision over the members of their discipline, as the City authorities recognised a rector of medicines and two surveyors of the faculty in London. The rector was a cleric and was an M.D. of Oxford, the other two were laymen who held M.B.'s; with them were two masters of surgery.¹²¹

They wished to obtain authority for the founding of a college which would improve both the education and the practice of physicians and surgeons in the metropolis and district. The civic authorities granted permission whereupon the rector and the two other petitioning physicians were appointed as surveyors for their branch of medicine and two to four surgeons for surgery.¹²² The college appears to have had a life of no more than two years. The reason for its demise is now known but possibly it tried to push its, as yet, tenuous authority too quickly upon the Barbers' Company, who whilst not one of the great companies, nevertheless had all the weight of the powerful City behind it.¹²³

Up to the time of the short life of the college, as far as known records relate, the physicians and surgeons had led separate professional lives and the physicians had not attempted to control

the surgeons.¹²⁴ After their possible attempt in 1425 their efforts in that direction apparently went into abeyance for a number of years, but there is evidence that by 1497 they had a considerable influence on the education and examination of a surgeon's fitness to practise. In that year a Robert Anson received a surgeon's licence which stated that he was a member of the Company of Barbers and that he had been examined not only by experts in surgery but by an instructor and examiner of that fellowship who was a doctor of physic.¹²⁵

The Founding of the COLLEGE OF PHYSICIANS

On 23 September 1518 the King granted letters patent under the Great Seal for the incorporation of the College or Commonalty of the Faculty of Medicine of London. The patent contained a clause that the rights of the City of London were preserved notwithstanding the provisions of the charter. The College was given the usual powers and privileges inherent in incorporation, such as the right to hold land and tenements (in this case limited to the low sum of £12 annual value), the right to sue and be sued, hold meetings and make ordinances for the control of the College and its members.

The other points of interest are:-

- 1) No one was to practise physic within London and for seven miles around "unless admitted by the President and College by letters sealed with their common seal."
- 2) Four of their number were to be elected to examine intending physicians, and to supervise and discipline practising members.
- 3) Punishment was to be exacted by fines and imprisonment and

and unlicensed practitioners were to be prosecuted.

- 4) As there was no clause safeguarding the rights of the universities to be licensing bodies throughout the kingdom, it could possibly be interpreted that their licentiates required a licence from the College before they could practise in London and district. This was to lead to considerable controversy at a later time.

- 5) The act of 1511 was not repealed.

Clark is of the opinion that the ecclesiastical authorities must have regarded their powers as having been revoked in London in respect of physicians, as there was little controversy between the bishops and the College, unlike that between the bishops and the surgeons.

- 6) Physicians were exempted from service on all juries and inquisitions in London and elsewhere.¹²⁶

The charter named six members and in the next three years six more were admitted.¹²⁷ Up to 1553, 31 new members were accepted but during those same years some 20 or so had died, so that numbers never exceeded about 20. The number of licentiates, who played no part in College affairs, is unknown. A licentiate had no M.D. but held either an M.B. or an university licence. It may be assumed that the figure was low.¹²⁸

No Parliament met until 1523 when the College took the opportunity of petitioning for incorporation by statute. The Act (14 & 15 Henry VIII, c.5) was passed without difficulty. The patent was recited and several new provisions added:-

- 1) The six persons named in the charter were to choose two more from the commonalty, so forming eight elects, from whom the

president was to be chosen yearly. Vacancies among the elects were to be filled by co-option, thus forming a right oligarchy.

- 2) Another clause greatly extended the College's powers, at least in theory, but its very small numbers and lack of administrative organisation outside London made it completely ineffective. In the provincial dioceses it was not always possible to find men capable of examining candidates for the practice of physic as demanded by the act of 1511, consequently it was enacted that no one was to practise throughout England until such time as he should be examined at London by the president and three elects and received letters testimonial. The only exceptions were graduates of Oxford and Cambridge who had fulfilled all the requirements for a medical degree without being excused any part.¹²⁹

Clark claims that this was the beginning of the type of membership known at a later date as 'extra-licentiate'. The first known two are, William Leverett, licensed to practise in Newark, and Robert Dalton, for practice in the diocese of Durham, both in 1559.¹³⁰ Cameron, however, is of the opinion that this additional power to license physicians outside the London area was not conferred until the act of 26 March 1663, and that it was then that the order of extra-licentiates was created.¹³¹

After the physicians charter had received statutory sanction, the College then went to the City in order to clarify its situation in relation to that body. This did not present any difficulty but there was one important condition. On 28 April 1525 the mayor and aldermen agreed that any physicians not examined and

approved by the College according to the statute, were, at the request of the College, to be compelled, upon pain of imprisonment for twenty days, and no more 'occupy physic' until such time as they were examined and approved by the College. The City did not however intend to act as the physician's police and made no attempts to seek out unlicensed practitioners.

In return the College and licentiates had to swear to sell no medicines if they could be obtained from an apothecary, provided, in their turn, the apothecaries swore that they would not dispense any prescriptions written by those of whom the College disapproved. The apothecaries were to keep the prescriptions on a file so that if 'the paycent myscary' the College could consider 'if the Bill were medicinal or hurtful'. The implication being that the error lay with the prescriber rather than the dispenser.¹³²

In the September the College tried its strength against three alleged unlicensed practitioners of physic, a surgeon, an apothecary and a 'quack' or 'pretender', in which it was apparently far from successful.¹³³

The Common Council did not absolve the physicians from the necessity of watch and ward, the sitting on juries and inquisitions, or the bearing of arms, most of which privileges the surgeons had had since 1387 (which were confirmed and extended in 1513) without extracting a price from the physicians, and then only twelve were so privileged.¹³⁴ This suggests that the City had long regarded the surgeons as the practical men required quickly in an emergency whereas the physicians were consultants upon whom immediate demands were rarely made.

The Council concurred that the College's examiners were empowered 'to enable or disable' practitioners of both physic and surgery. It is known that Dr. Nicholas Encolius, a fellow of the College, received £10 a year from the Crown in 1552 for instructing young surgeons near the Savoy.¹³⁵ He was allowed to use the bodies of felons executed in Middlesex, Sussex and Essex. The great Dr. Caius, who did so much to place the College on a strong footing, was keenly interested in anatomy and on his return from Italy he attended dissections at Barber-Surgeons' Hall for nearly twenty years. Probably on his instigation, the College obtained a charter (24 February 7 Elizabeth) granting them four corpses a year for dissection; these were performed publicly in the College in order of seniority by the fellows.¹³⁶ In early 1582 the College received a gift of £40 annually from Lord Lumley and Dr. Richard Caldwell to be used for the salary of an anatomical lecturer.¹³⁷ Attendance at these lectures was made compulsory but nevertheless they were but poorly patronised. The Gulstonian lecture in morbid anatomy was first mooted in 1624 but was not satisfactorily instituted on a permanent basis until 1633.¹³⁸ Dr. Foxe, newly elected president, proposed on 27 April 1638 and the College agreed, that all dissections were to be carried out by the fellows themselves and that no outside assistant was to be employed. Possibly the reasons were economic but in any case the decision was all to the good.

The Physicians' Act of 1540 - (32 Henry VIII, c.40)

The preamble recites the petitioners desire for parliamentary confirmation that they were exempt from watch and ward and from municipal office, and that the exemption should apply to all the

towns and villages of England. Thereby hoping to discontinue the payments the City was currently demanding. They obtained their desire but only for London and the suburbs.

The second clause was for the purposes of obtaining a tighter hold over the apothecaries, inasmuch that four of their members of the College were empowered to enter the shop of any apothecary in the City, examine his wares and if found defective, the warden(s) of the mystery of apothecaries, (that is of the Grocers' Company) were to be summoned and the goods destroyed. In this they were successful, but probably met considerable obstruction as Walter Cromer, royal physician, tried to promote legislation which would strengthen the College's powers.^{138a}

The third clause gave any member of the College the right to practise surgery if he so desired, "Forasmuch as the science of physick doth comprehend, include and contain the knowledge of surgery."¹³⁹ The next Act but one, (32 Henry VIII c.42) of Henry's reign dealt with the setting up of the new Barbers' and Surgeons' Company and it seems likely that this last clause was inserted into the physicians' Act in full knowledge of the impending Barber-Surgeons' Act. The first clause could not have gained the physicians friends in the Common Council and they had had the foresight to guard themselves from being accused at a later date of infringing the rights of a City company by practising surgery.

The Act of 1553

This act again strengthened the College's coercive powers. In future the procedure for imprisonment would be such as to eliminate evasion, and secondly should the wardens of the Grocers' Company refuse or be tardy in accompanying the president and the

four elects when they had decided to view the apothecaries' wares, then the College authorities were allowed to procede without the wardens.¹⁴⁰

In the 1550's and 60's the College tried to enforce its accumulated powers strictly. The wardens of both the apothecaries and the surgeons were summoned to the College and there told to transmit back to their members that they were forbidden to practise medicine, to reveal the names of medicaments or to return prescriptions. On July 28th 1558 the apothecaries were told that they must in future display their drugs which were to be ground in the windows of their shops for at least six or eight days so that the quality of their wares could be determined by the physicians. This was not only for the convenience of the latter but indicated that they were incapable of determining the quality of drugs if they were once compounded. The apothecaries retorted by saying that if this were the case then the spicers must also be included.¹⁴¹

To make the situation even clearer the apothecaries had to listen to a letter from the new Queen Elizabeth in which she commanded the College to enforce the acts of 1540 and 1553, and also to summon all the apothecaries in order to forbid them to sell poisons except on a physician's written order, or failing that only to people of good repute and then their names were to be noted. At the same time they were reprimanded for selling and supplying pills without the consent of a physician and for poor preparations. These successes encouraged the College to try to promote a Bill in 1562-3, in which they would have the sole right of search and censure of apothecaries, the grocers being confined to foodstuffs.

This did not commend itself to the Grocers' Company, or indeed to many of the apothecaries, who undoubtedly felt the zealous physicians alone without the counterbalancing power of a great City company, would prove far too great a burden for them.

By June 1585 the College, and not before time, thought of producing a pharmacopoeia, a standard which was to be imposed on all the apothecaries, - and presumably physicians - of London. Whether there was a direct connection or not is unknown but it is possible that the project was linked with the fellows decision in 1587 to start a physic garden. On 12 July they rented a garden from Lord Sackville at £26-13s-4d a year, and in October engaged the surgeon, John Gerard, as its curator. The apothecaries became suspicious of these activities and sent a petition to the Queen asking for the monopoly of making and selling composite medicines. This had a particular urgency because the College was already considering making void their statute that none of that body was to compound medicines or buy them with a view to profitable re-sale. The apothecaries' worst suspicions were confirmed on 25 June 1590 when this restriction was not included in the College's newly framed statutes.

Five years after the pharmacopoeial committee had started work in 1589, there had been little progress and the whole scheme died for another twenty years.¹⁴² Work seems to have been resumed in about 1614 and by January 1617 it was arranged that two of the doctors should start proof reading and that four of the apothecaries should attend daily. In the spring of 1618 this work was published to be almost immediately withdrawn and they very substantially amended. The second edition appeared seven months later on 7 December.¹⁴³

The quarrel between the physicians and the surgeons hinged on the right of the latter to administer internal medicines. In early 1598 the Barber-Surgeons' Company tried unsuccessfully to promote a parliamentary Bill in which they would have been granted permission to prescribe medicines for internal treatment. The surgeons were quite open and unrepentant in their transgressions of this prohibition. A surgeon called Jenkins in 1602 told Sir John Popham, Lord Chief Justice of the Queen's Bench, that his practice was not illicit because he was a surgeon and in surgery the use of internal medicines was often necessary. The judge was not won over to his point of view and pronounced that he should always summon a physician in such cases and that, "No surgeon as a surgeon might practise physic, no not for any disease, though it were the great pox." Nevertheless Popham requested the College to remit one third of Jenkins' fine. Ralph Barret in 1603 admitted freely that he had given a purgative pill for the pox but said the surgeons' regulations, which were read publicly at their meetings, stated that there was no need to obtain a physician's advice in cases of venereal disease and plague.¹⁴⁴

James I in 1605 when he re-granted the Barber-Surgeons' Company's charter, the surgeons tried to take the opportunity of having inserted a clause which would allow them to administer such inward remedies as they had discovered to be necessary for their patients, a right, they contended they had once had. They were of the opinion that the physicians had taken upon themselves the arts of both the apothecary and the surgeon which did not belong to them. The surgeons were not successful and they darkly suspected that this was due to the machinations of the physicians.¹⁴⁵

Their area of jurisdiction however was extended to a circuit of three miles.¹⁴⁶

On the separation of the apothecaries from the Grocers' Company the physicians again acted in a fashion which is reminiscent of their actions in 1540.¹⁴⁷ The Bill of separation was not finally sealed until 6 December 1617 but on the 8 October the physicians obtained a new charter from James I. The petitioners were Drs. Atkins, Mayerne and Lister, the first two being the promoters of the apothecaries' Bill. The charter, which had been apposed by the barber-surgeons, gave the College all the powers it wished for dealing with non-collegiate practitioners and sellers or handlers of physic.

- 1) It gave the president and censors the right to examine, survey, Govern, correct and punish all physicians, practitioners of physic, apothecaries, druggists and distillers in London.
- 2) They now had the right to summon all apothecaries, surgeons, druggists, nurses and patients' servants to give evidence on oath.
- 3) The search of apothecaries' premises was now supplemented by their right to summon the apothecaries and examine them on oath concerning the composition of any compound.¹⁴⁸

In January 1621 James I's new parliament began its life, one which saw much activity in the branches of medicine. The surgeons yet again attempted to gain freedom to administer inward remedies and again failed, and neither the physicians nor the apothecaries succeeded in gaining parliamentary confirmation of their recent charters. The physicians did not oppose the apothecaries in any way but the Grocers' Company in 1624 tried to reverse many of the decisions of seven years earlier. Happily James I once more stood

firmly by the new company and their charter was reaffirmed by royal warrant.¹⁴⁹

The College's relationship with the apothecaries deteriorated from 1625 onwards and they were also on bad terms with the barber-surgeons. When some sea-surgeons presented themselves at Barber-Surgeons' Hall for examination, the physicians were not formally informed and when in their turn they came to the Hall they found the doors shut to them.¹⁵⁰ The demand for sea-surgeons was increasing, partly because of looming wars and partly because of the rise in overseas trade. The physicians still tried to enforce their claim to supervise surgery as being an integral part of medicine; they desired to examine the surgeon's sea-chests and proposed that trepanning and other operations of that magnitude should only be done by a surgeon on the advice of a physician. The former pointed out that this was totally impracticable when at sea and it was doubtful if any surgeon would serve on those terms.¹⁵¹

At the beginning of the next reign the surgeons succeeded in making some advances. Charles I in 1629 gave them a new charter, which like that of the physicians, was never confirmed by statute. It increased their juridical area from three miles to seven, ordered the appointment of a court of examiners in surgery and entrusted to the Barber-Surgeons' Company the duty of examining and approving ships' surgeons. The new charter not only forbade surgery in London and district without the Company's agreement but gave all those so examined and approved the right to a licence to practise anywhere in England and Wales. Public lectures in surgery were also authorised.¹⁵²

The most far reaching of all the physicians' charters, the Jacobean charter of 1617, never received parliamentary confirmation. In the following years, as Parliament's power grew, and the monarch's was eroded, it could have proved dangerous for the College to pursue the matter with too great a vigour. As Cameron writes, "If the provisions of the charter granted by royal prerogative were to enjoy the force of law, so that they could be enforced in the ordinary courts of justice, confirmation by enactment of parliament was necessary,"¹⁵³ but to have been a friend of the King made one ipso facto an enemy of Parliament, the new power in the land, so the physicians deemed it wise not to push matters too far. Instead they turned their attention to the apothecaries, thinking it was high time that they were brought into a suitable state of servitude, not to say humility. Mayerne's true feelings towards the apothecaries came out when they challenged the right of the distillers to be incorporated, another of Mayerne's brain children. He stated that the purpose of the apothecaries' charter was to make sure that they dispensed the physician's prescriptions as he required them to be done, and "not abuse the powers put in their hands but content themselves to use them with order, modesty and reverence to their superiors, the physicians."¹⁵⁴

On 19 November 1630 Dr. Argent, the president of the College, told the apothecaries that the oath they took on admission to their art was not comprehensive enough. It was desired that they should swear that:-

- a) They would dispense truly according to the physicians' prescriptions.
- b) They would not use corrupt ingredients.

- c) They would not sell sophisticated goods or those which had lost their virtue.

This, the apothecaries must have interpreted as an intolerable insult to their professional standards, some of which could be traced back to the fourteenth century when they were members of the Grocers' Company.¹⁵⁵ In 1632 the College went on to propose that:-

- a) Eight named poisons should not be sold except to people who gave their name and address.
- b) No apothecary was to compound or administer any medicine, especially emetics, purgatives, soporifics and those containing mercury and antimony, except on the prescription of a living doctor, which was to be produced on demand.
- c) Apart from the three clauses outlined above, the apothecaries were also to swear that they would only prepare compound medicines according to the Pharmacopoeia Londinensis.
- d) The apothecaries were reminded that their apprentices at the time of gaining their Freedom, were also to be examined by the physicians.
- e) The Society of Apothecaries was to inform the College whenever there was any change in drug prices, and the Society itself was to price all the compound medicines.¹⁵⁶

The Society began to enforce point d) more consistently but within a year the College was so arrogant as to refuse to be summoned to Blackfriars as the apothecaries' charter required, but insisted on the apprentices and the Society's officers coming to Amen Corner, the home of the College.¹⁵⁷ The apothecaries were not intimidated by these proposals and fought back with vigour. They said they did not believe that such an oath was necessary to

make them men of integrity, and in any case, the first three clauses were already covered by their own charter and bylaws. They went on to add that if they were not to sell poisons then cutlers should not sell knives, which shows a regrettable lack of a sense of responsibility.¹⁵⁸ Thirdly, if they were not to be allowed to sell any medicine except on a physician's prescription then they would no longer be able to survive, in which case the poor people would suffer greatly. Finally, they pointed out that when emergencies occurred they gave the best help they could, and cunningly enquired if they should have withheld this help when the physicians had left the City in the last outbreak of plague.¹⁵⁹

In discussion at one of the committees in 1633 other quite unworkable suggestions were made in order to control the apothecaries. One fellow suggested that the patient should not pay his bill until the doctor had agreed that it was reasonable. Another just as objectionable and potentially more dangerous, was that an exclusive right to dispense collegiate physicians' prescriptions should be given to only those apothecaries who were meek enough to conform to what the physicians had decided was the desirable behaviour of an apothecary.¹⁶⁰

The College issued a manifesto in which they complained that the apothecaries aided unlicensed physicians, by way of reply the Society said firmly that they were freemen of the City and so entitled to trade with all, and in any case there were many doctors of medicine both in London and the rest of England who were in practice but not members of the College. Furthermore, there were many well educated men such as clergymen and lawyers who,

though not trained in medicine, liked to treat themselves and their friends. The apothecaries also supplied medical supplies to customers overseas, in Russia, Poland and Turkey. One requirement of the College they found particularly insulting, the demand that they should bring all their wares to the College for testing before they were put up for sale. In the end the Company told the College bluntly that the apothecary's skill and honesty should only be subject to the control of his own organisation, and apart from anything else the physicians were not competent to judge apothecary wares.¹⁶¹

The famous William Harvey weighed in against the apothecaries, comparing their position with that on the Continent in such cities as Cologne, Frankfurt, Nuremberg, Prague, Siena, Florence and Rome. There the apothecaries were:-

- 1) Dependent on the physicians and tied by certain oaths.
- 2) Their numbers were limited and their prices fixed for them.
- 3) They were only allowed to make for sale such medicines as were allowable in the local dispensatory.
- 4) Everywhere apothecary wares were searched and corrected by the physicians.¹⁶²

What he did not mention was the difference in numbers between the physicians in those lands and in England. In France it was complained that there were in many provinces too many physicians, yet, even in London by far the most heavily populated part of the country, there were only fifty members of the College to maintain, not only the minute supervision of the apothecaries, but also the control of their own licentiates and their own College. At the time of the granting of their charter there were 115 named

apothecaries and "all others" who had been skilled in the art and were freemen of the grocers or other City companies, so it is scarcely surprising that in 1635 the physicians claimed that the number of apothecaries' shops had "soe encreased ... as it is not possible for the Colledge of Phisicions to gouerne the same." The apothecaries denied that they numbered as many as 250 but rather 150, as they had increased only 10 or 12 since their incorporation.¹⁶³ A still not inconsiderable number of people and establishments to inspect.

The apothecaries did not tamely submit to the physicians arbitrary and unrealistic demands. In the end the whole quarrel came to a head on the small matter as to whether "Lac. Sulphuris" might be sold by the apothecaries or not. The College exerted all its own powers and then appealed to the privy council and the attorney general. The latter entered a 'quo warranto' suit, alleging that the apothecaries had violated their charter.¹⁶⁴ This, in the reign of Charles I, was a very serious matter and frightened the apothecaries into a degree of appeasement. At first this seemed to pay dividends but the physicians were bent on pushing through their whole policy. A body of referees were appointed by the privy council in 1639-40, who seemed to have been far from impartial, reporting that it was desirable that in future the apothecaries would:-

- 1) Take the oath with all the clauses included.
- 2) Accept the poison clause.
- 3) Agree that all price-fixing should be undertaken by the master and wardens and the College should be informed of their decisions.

- 4) No longer have the right of search except by direction of the physicians, though the latter's search rights were still safeguarded.
- 5) The apothecaries' oath of secrecy was not in future to bind them against divulging a medicinal composition if questioned by the College.
- 6) They were to be dependent on the College and be regulated by it in their professional conduct.
- 7) They were no longer to summon the president to attend the examination of apprentices, but were to go to the College instead, and there receive written approval.
- 8) They would no longer call the president to be present at the making of their bylaws but would receive their ordinances from the College.¹⁶⁵

Thus the Society of Apothecaries was to be deprived of any independent action and was to become an appendage of the College. The Society had no alternative, if it were to have a separate existence in any meaningful sense, but to refuse to comply.

National events then overtook both parties by the rapidly hardening divisions of the country which culminated in the Civil War; the King was impotent in London and Parliament had more important things to debate than who should trudge, in which direction, from Blackfriars to Amen Corner.

If for the moment the College of Physicians had to tread warily the Grocers' Company suffered from no such inhibitions and presented a petition to the Long Parliament for the annulment of the charter of apothecaries. Attacked on another front the apothecaries quickly drew up a counter-petition, but much of it

seems to deal with the iniquities of the physicians rather than the effrontery of the grocers. Interestingly they emphasised that the physicians kept unskilful persons in their houses to dispense their prescriptions.¹⁶⁶ This was a reference to the habit of many physicians, anxious to keep the formulae of their remedies secret, of keeping their own dispenser who was sworn to secrecy.¹⁶⁷ The prescribing of secret remedies was publicly defended by Thomas Coxe, Christopher Merrett and Jonathan Goddard. Even if the doctor did not keep a private dispenser it meant his prescription could only be dispensed by an apothecary designated by him, a practice which tempted both to split the profit between them, or as Gideon Harvey put it, they went 'snips'.¹⁶⁸

Since its inception the College of Physicians had had a small library and in 1629 was bequeathed 680 volumes which was further augmented two years later, but its real expansion occurred during the Interregnum. As the result of a gift from Dr. Harvey a new library and a small museum were built in the years 1651-54. Drs. Ent and King, both future members of the Royal Society, were placed in charge of the library in 1651.¹⁶⁹

Of greater eventual importance to the apothecaries was the founding of a small laboratory in the College garden.

William Johnson was appointed chemical operator and apparatus was bought for him in 1651. Clark suggests that his business was not only to prepare standard medicines for inspection and presumably for comparison with alleged defective apothecary wares, but also to make chemical preparations for the use of the doctors in practice.¹⁷⁰ The apothecaries are reputed to have had a laboratory since 1623 and were offered £500 by Edward Cooke to build a new one in 1641.¹⁷¹

That this did not take place must be blamed on the troublous times, in any case the financial straits of the Society were so severe by 1643 that they made arrangements to sell the plate.¹⁷²

This laboratory of the physicians does not seem to have raised the ire and suspicions of the apothecaries at this date, possibly because their real interests still centred on galenical preparations. Relations were cordial enough for William Johnson to be incorporated to the Society in 1654, the only proviso being that he was not to meddle with galenicals.¹⁷³ The physicians' laboratory was burnt down in the Great Fire of 1666, which possibly stirred the apothecaries into thinking that a laboratory for the production of medicinal chemicals was desirable. On 8 September 1671 it was ordered that a "Laboratory be erected and finished" and a set of rules was agreed at a court of assistants in the following year.¹⁷⁴

Post-Restoration Period

Before the Civil War the number of fellows at the College was set at thirty but even this modest figure was often difficult to fill. Dr. Meverall, the current president believed this was due to the statute which insisted on incorporation at Oxford or Cambridge universities, so in 1642 it was waived, and by 1647 had disappeared.¹⁷⁵ The College had shown concern over foreign degrees as far back at 1584. Eleven years later it was agreed to write to Leyden University to persuade it to be more selective in granting its medical degree. Leyden's teaching at that period was excellent, it had a fine physic garden and library but people were able to obtain a degree after a very short residence. The attendance at foreign universities was cheaper than completing the full English university course, but the balance was in some

measure redressed by the College insisting on incorporation and by demanding triple fees on admission.¹⁷⁶ Now the College was forced to abrogate these earlier statutes.

In spite of these amendments the physicians were forced at the time of the Restoration to introduce the concept of the 'honorary fellow'. They admitted there were many doctors in London who had good reputations as men and scholars but who were neither fellows nor candidates; as a public examination would be an undue hardship they were to be admitted without one. The entrance fee was £20 and as the first list of 1664 held 73 names, the College made a very handsome sum of money.¹⁷⁷ It is particularly interesting to note that not all the new members were London residents, quite a number were provincials including the renowned Dr. Thomas Browne of Cambridge.

The College had shown but little interest in the provinces though with the removal of the bishops and their licensing system in 1642 the number of licences granted to extra-licentiates had risen. With the restoration of the monarch came that of the bishops' licence and after 1664 the numbers of extra-licentiates fell away abruptly.¹⁷⁸

The admission of honorary fellows proved a lucrative method of restoring the College's fortunes but was brought to an abrupt halt by a royal letter dated 25 February 1675 informing the president that no more were to be admitted without examination. The royal interest had nothing to do with medical standards but was concerned that large numbers of doctors were able by these means to avoid taking the Oaths of Allegiance and Supremacy, which would have been demanded on incorporation at Oxford and Cambridge.¹⁷⁹

A simple method of continuing this grade of membership was devised, whereby the obligatory examination was reduced to one and that only by invitation, it doubtless being no more than a formality.¹⁸⁰ Eleven of the new type of honorary fellows were elected in 1680, the first being Nehemiah Grew, a non-conformist, which no doubt explains why he was left off the list of honorary fellows on the new charter of 1687, to be restored in 1689 with the advent of William and Mary.¹⁸¹

After a brief period of fairly aimable relations between the apothecaries and the physicians battle was joined again. On 26 March 1663 the latter received their new charter from Charles II, in which they were given the title of the 'King's Colledge of physicians in the City of London'. The area of the College's jurisdiction was enlarged by making it a radius of seven miles from the city of Westminster as well as from London. The right to grant extra-licentiate licences was specifically given to the president and the elects or any four of them, "in any part of this our kingdom", but there was no reference to the powers belonging to the bishops or the universities, whether they had been revoked or not. There does seem to be a suggestion that the Crown was aware there was a certain dissatisfaction with the College's arbitrary ways. A time limit of one year was imposed in which an offender could be charged, a court must have a quorum of fifteen and every sentence had to be approved at the next court and registered.

A certain control from above was also to be imposed by the appointment of four visitors, the lord chancellor, the two lords chief justice and the chief baron of the exchequer, who could hear appeals against decrees or sentences of the College, an innovation

very shortly to be used by the surgeons and apothecaries.¹⁸²

Like the earlier charter of 1617 that of 1663 never received parliamentary confirmation, possibly as a result of the petitions simultaneously presented by the surgeons and apothecaries, so that the new proposals, such as the extension of its area of jurisdiction were never implemented.¹⁸³

The College also did not accept and never implemented the clause which, re-iterating a principle first introduced in 1647 said that all fines, excepting those for illicit practice the costs of the administration having already been deducted, were to go to the poor of the parish where the misdemeanour had occurred.¹⁸⁴ An interesting point because within ten years the College was to profess a new concern for the poor.

In June 1664, Timothy Clarke, a man who had expressed resentment at not having been elevated to a fellowship, on behalf of all the candidates, complained bitterly of the apothecaries, and asked that the candidates should be given leave to practise pharmacy. The idea immediately commended itself to the meeting as they unanimously agreed "that it would redound to the honour of the College, to the advantage and security of the art, and to the health and economy of the public if every candidate and licentiate prepared and compounded his own medicines."¹⁸⁵ This was in effect a declaration of open warfare.

Soon afterwards the Great Plague broke out, an event which did little to improve the image of the physicians in the eyes of the public.

The Pamphlet War

The pamphlet war was opened by blasts from the pens of Christopher Merrett (1669) who had once been regarded as a friend of the apothecaries, Daniel Coxe (1669) and Jonathan Goddard (1670) though the latter claimed he had started his discourse five years earlier. Merrett wrote frankly that he had for some time dispensed his patients' prescriptions and admitted that most of the physicians had left the City during the plague, whereupon the apothecaries had taken over all medical duties and now refused to relinquish them.¹⁸⁶ Goddard also made a damaging admission when he wrote that the physicians had neglected becoming fully conversant with the art of the apothecary. Nevertheless both men were of the opinion that physicians should prepare their own medicines, particularly their secret remedies. When the Society challenged the College on its attitude towards Goddard and Merrett the reply was bland, it made the usual demands of apothecaries and even went so far as to deny that it had ever tried to forbid the sale of medicines not actually prescribed by physicians.¹⁸⁷

A counter blast was prepared by the apothecaries and their friends. The most telling one was Lex Talionis or a vindication of apothecaries, probably written by Henry Stubbe, a physician who had never in any way been associated with the College. He had practised most of his life in Stratford on Avon and Warwick, and was an admirer of Thomas Willis.¹⁸⁸ He asserted that physicians were not sent for in cases of small-pox and measles (which were still with difficulty distinguished one from another) because they prescribed immediate bleeding and vomits, " ... which according to the Rules of art may be justifiable enough, but the issue

proving fatal."¹⁸⁹ The practical bedside observations of the apothecaries approximated to those of Thomas Sydenham's and were more successful when put into practice.

Another telling pamphlet was Medice cura teipsum (1671), to which a physician wrote in reply, "The sick call the Apothecary, Doctor; if allowed to do so they will soon think him a fit and lawful practitioner."¹⁹⁰ In the view of Cameron, "the people generally had begun to regard the apothecary as their legitimate medical attendant, in their opinion well qualified for the task."¹⁹¹

The 'Quo Warranto's

As part of Charles II fight against municipal corporations and bodies corporate the apothecaries were served with a 'quo warranto' in April 1684.¹⁹² A number of the court of assistants, the master and the senior warden together with the clerk were purged, but the charter itself was little altered. The surgeons were likewise in receipt of a new charter at the end of 1684. Within a matter of weeks Charles II was dead. (6 February 1685)

The physicians learnt in October 1685 that they too were to be subjected to a 'quo warranto'. On the suggestion of their president Sir Thomas Witherly they decided they might avert royal wrath if they relinquished their charter before being asked to do so. The new charter was received in March 1687. The number of fellows was increased to eighty, and, as in the case of the apothecaries, the lists of both ordinary and honorary fellows were purged. Otherwise, except for a clause giving the College legal sanction to censor medical and surgical books, which it had already been doing unofficially, the charter was a confirmation of that of 1663.¹⁹³

Between November 1687 and February 1688, the first time for a century, the College sent a letter to every bishop, re-iterating

their old claim that the act of 14 & 15 Henry VIII had suppressed the bishops' powers which had been transferred to the president and elects of the College, they therefore expected the bishops to send all applicants to London for examination by those officials. Other than one small gesture on the part of the Bishop of Chester, the bishops appear to have totally ignored the request.¹⁹⁴ The interest in the provinces on the part of the physicians once more quickly died down.

In the summer and autumn of 1687 in a great flurry of activity, fifteen new statutes were passed, one of which, number seven, which came to be known as 'The Statute of English Directions', was aimed at the apothecaries. The physicians were of the view that the apothecaries could have obtained their medical knowledge only by reading the directions, which were in Latin, written on the prescriptions. In order to deny them this advantage the statute directed that in future, on pain of twenty shillings, no directions at all were to be written on the prescription, but rather they were to be given directly to the patient, and of course in English. To make sure that the statute was receiving compliance the censors started to examine all the doctors' bills in the apothecaries' shops; if obstructed in their self-appointed task then the apothecary was 'discommuned' or black-listed.¹⁹⁵

The Dispensaries

A Mr Hewk was in charge for six years of the physicians' new laboratory built after the fire of 1666, but little is known of his activities.¹⁹⁶ In March 1685 a new scheme was drawn up. Twelve members, that is both fellows and licentiates, were to manage the project in turns, the operator being one who was merely

capable of following their directions. The prepared medicines were to be stored, the purpose for each to be recorded, and then as occasion demanded, were to be supplied to such apothecaries as were appointed by the College, who would then sell them, the profits accruing passing to the physicians. This plan was probably devised in order to keep the formulae of secret remedies quite safe from prying apothecaries. Whatever the reasons nothing came of it.¹⁹⁷

In 1675 the College had become interested in the provision of medical treatment for the poor, and as a result decided to appoint some of its fellows to come 'successively' to Warwick Lane from 10 a.m. to midday to give advice to those poor persons who brought a 'certificate of necessity' from such official people as churchwardens or common councilmen. They also intended to give medicines to the poor at cut rates. At the College's suggestion there was a meeting between them and the Society of Apothecaries, presumably with the idea of asking the latter to sell them drugs at cost or only slightly above. The meeting seems to have been aimable and the apothecaries expressed a desire to be accommodating by agreeing to supply medicines to the poor "att the lowest and most reasonable rates," if they submitted prescriptions duly signed and stamped from the College.¹⁹⁸

Thereafter the records are silent and how much or how little provision for the poor was made is unknown. That at least some of the apothecaries had been sincere in their desire to help may be inferred from a suggestion in council that the profits of the laboratory, which were considerable, should be given to the poor.¹⁹⁹

Late in 1687 the College once more toyed with the idea of free consultation but this time there was no hope of friendly co-operation with the apothecaries as they were in the throes of fighting the 'Statute of English Directions'. The lord chancellor, Lord Jeffreys, in March 1688 visited the College summoning all the fellows as well as the officers of the Company of Barber-Surgeons and the Society of Apothecaries. Jeffreys informed the fellows that his visit had resulted from a " ... great outcry in the Town of the Physicians injuring both the Chirurgions and Apothecaries who had petitioned him to do them right, wch. in Justice he could not refuse."²⁰⁰

The surgeons complained as usual that they were threatened with prosecution if they gave physic to their own surgical cases, and that one of the College statutes prohibited fellow, candidate or licentiate from consulting with an empiric, that was to say any not licensed by the College which of course included themselves. The lord chancellor found this such a ridiculous state of affairs that he declined to believe that this was what was intended in relation to the surgeons, so dismissing their fears.

The problems of the apothecaries were more complex. They declared that the new statutes had given the physicians the power to ruin any apothecary who did not please them. They pointed out also the dangers of the 'English Directions'; that if the physician made an error then the apothecary had no opportunity to rectify it; that the patient could easily mislay or misunderstand the directions; and finally if an overdose should occur then neither the apothecary nor the physician would have evidence to clear himself. The arguments were so irrefutable that Lord Jeffreys rapped the

knuckles of the physicians pretty soundly.²⁰¹ There seems little doubt the lord chancellor had a certain sympathy for the apothecaries. Clark suggests that the physicians' president, Sir Thomas Witherley was as helpful to the apothecaries as he could be under the circumstances.²⁰² The controversial statute was not repealed but action was not taken on it before December 1688, well after the fall from power of both James II and Judge Jeffreys, and Witherley was no longer president. Amongst the first offending doctors were Nehemiah Grew and John Radcliffe.

The College was at this time rent with dissension, in the first instance it arose from anomalies resulting from the confusion of charters being awarded, exemplified and withdrawn in the reigns of Charles II and James II, but by the late 1690's much of the friction stemmed from two opposing and incompatible points of view. The majority, which included the president and censors, wished to crack down hard on the apothecaries, whilst the smaller but nevertheless influential group, felt that all would benefit if the attitude towards the apothecaries were more liberal and reasonable. The latter included such people as Dr. Francis Bernard, who had started life as an apothecary and was one of the few men to have been simultaneously a fellow of the College and a Freeman of the Society,²⁰³ Tancred Robinson, botanist and friend of James Petiver apothecary at the Charterhouse and Samuel Dale, apothecary of Braintree, Peter Gelsthorp, son of an apothecary, the well known John Radcliffe, who had even gone so far as to seek the Freedom of the Society by redemption, and Hans Sloane, who numbered many apothecaries amongst his friends and was a munificent benefactor to the Chelsea Physic Garden. The younger

fellows, such as the last two and later Richard Mead (who did not seek admission to the College until after 1707 when the objectionable statute had been withdrawn) opposed this warfare. Indeed they made their large fortunes by co-operating closely with the despised apothecaries. They met them regularly at the particular coffee houses which they patronised, and there for a fee of half a guinea gave a consultation and advice for the case described. This was scarcely a desirable practice but at least the apothecaries developed keen powers of observation.²⁰⁴

In this atmosphere it was unlikely that the apothecaries would co-operate with the physicians when they resuscitated their plan for treating the poor in 1687. The troubles of adapting to yet another reign probably contributed to the College dropping this latest plan until December 1694. On this occasion it was undoubtedly sparked off by the apothecaries being given leave to bring in a Bill. They petitioned for and obtained exemption from all municipal offices and jury service, not only for all freemen of the Society but also for those provincial apothecaries who had passed through a regular seven year apprenticeship.²⁰⁵ It was reported that the apothecaries' counsel had said that his clients had nineteen-twentieths of all the medical practice in London, including all that of the sick poor, possibly a reference to the poor who were treated under the Poor Law.

This appears to have been the first time the London company had concerned itself with the country apothecaries but it cannot have been unaware of them or their practices as London apothecaries trained a high proportion of them. Men such as John Trott of Northamptonshire and Thomas Denman of Nottinghamshire, progenitor

of a long line of provincial apothecaries, were bound apprentice in London and then returned to the country to practice.²⁰⁶

Almost immediately after the apothecaries' Bill of 1694 was passed the physicians once more resurrected their plan for a medical service for the poor. On this occasion it seems their true motives were far from philanthropic, whatever they might have been in 1675 and 1687. In principle the apothecaries accepted the idea but when they investigated who was to do the dispensing they became increasingly suspicious. They found that the College had drawn up a list of 'honest and charitable apothecaries' who would supply medicines at rates approved by a committee of physicians. The men from Blackfrais preferred that each parish should employ any freemen who lived in that parish, or failing that, nearby; but the real division came over pricing. The College were determined it should lie with their committee whilst their questioners felt the pricing must be left to the individual apothecary who would be enjoined to keep it as low as possible.

This proving non-negotiable, by way of retaliation and probably with tongue in cheek, the apothecaries offered to not only sell medicine at its intrinsic value but to give their own medical services if a physician were not summoned by the churchwardens or overseers of the poor.²⁰⁷ The apothecaries knew this was totally unacceptable to their opponents and a deadlock was reached. In the end the members of the College decided to continue by themselves and practise pharmacy and medicine together.

The first dispensary, situated at Warwick Lane, was operating by June 1697.²⁰⁸ The initial funds for the enterprise were obtained in August 1695 by the £1 subscriptions of 58 fellows, candidates and

licentiates, but only 42 out of a possible 96 gave their promise of £10 each in December.²⁰⁹ Two more dispensaries were opened, one in Gracechurch Street and one near St. Martins-in-the Fields. The protagonists of the dispensary scheme in 1701 attempted to obtain the contract for supplying medicines to the Bishopsgate workhouse.²¹⁰

The physicians attended only on Wednesday and Saturday afternoons, and the bulk of the dispensing and selling was done by employed operators and salesmen so for a minimum of effort and cost the physicians must have substantially reduced the work-load of the apothecaries. In effect the dispensaries were open shops which were advertised in newspapers and journals, and the charge was often made that the physicians allowed their well-to-do friends to buy there.²¹¹ The Earl of Peterborough, a grateful patient of the president Sir Thomas Millington, in December 1702 secured for the dispensary the contract to supply the drugs for the fleet sailing to Jamaica where he had been appointed governor. This had nothing whatsoever to do with the treatment of the poor and was a direct attempt to invade the apothecaries' territory.

The master of the Company promptly approached one of the secretaries of state so that the Queen could be informed, only in the end to be told that matters had gone too far for them to be stopped. The apothecaries were particularly downcast when they discovered that one of their own members, Richard Lawrence, had agreed in 1704 to supply the College dispensary for the contract.²¹² In the event Peterborough's commission was cancelled and the whole deal fell through, and curiously produced good dividends for the Society. The master told the court of assistants that he had been

well supported by Mr. Sergeant Bernard,²¹³ who had told him that the Queen had been enquiring if the Society would supply the navy with medicines. This was a golden opportunity and was quickly acted upon. All the Company's proposals, with the exception of the one requiring all army and navy surgeons to procure their medicines from the Society's shop, were accepted and the agreements were signed by July 1703.²¹⁴ The dispensaries on the contrary do not appear to have prospered and they were all defunct by 1725.

The ROSE Case

This action which finished in the House of Lords had the most momentous effect of any of the battles which scar the relationship between the apothecaries of the London company and the physicians of the College.

In February 1701 William Rose, on information supplied by his ex-patient John Seale, a butcher in Hungerford Market, was sued in the Court of Queen's Bench by the College of Physicians under the act of Henry VIII for practising physic. There was no doubt that he had been summoned to the sick man and that he had prescribed and supplied boluses, electuaries and juleps, but the jury was unsure if this constituted practising as a physician in such a way as was prohibited by the Act. After protracted discussion the court ruled in favour of the College on 5 November 1703, although the lord chief justice termed the action extravagant on its part.

The attorney general recommended the Society to apply for a writ of error in the House of Lords as he believed it would reverse the judgement. The case was heard on 15 March 1704 and

the House was of the opinion that the previous decision could not be upheld, not only because it was contrary to custom but because the advice and treatment given by apothecaries was in the public interest. Counsel for the Society had laid stress on the belief that if the earlier court's verdict stood then no apothecary would dare in future to give treatment in cases of sudden accident or of worsening or frightening symptoms which so often occurred at night, when the apothecary rather than the inaccessible physician was called. Likewise, they would not be able to sell remedies for even slight afflictions, or in other words counter-prescribing would be forbidden to them. If the physicians succeeded in establishing a monopoly then many of the poor would receive no medical care as they were unable to afford physicians' fees, and even the nobility and gentry would be adversely affected because they would have to pay heavy fees for their own minor ailments and their servants' illnesses.²¹⁵

The physicians tried to equate the medical services of the apothecaries in times of emergency with that of any good but unskilled neighbour, and made great play of their dispensaries. They did not mention that the poor who attended there had to bring letters testimonial, which meant that they were a quite different class of person from that which the apothecaries meant. Their arguments do not appear to have impressed the House of Lords.

Thereafter, although the physicians still continued their searches, their activity against the apothecaries was of a much less aggressive nature. Occasionally they tried to frighten an apothecary with a charge of malpractice but in the end confined themselves to occasionally forcing the apothecary to reduce his

charges for medicines supplied in the course of treatment.²¹⁶

The Chemists and Druggists

During the years which culminated in the Rose case and the years immediately following, two groups of people the druggists and the 'chymists' grew in numbers; they both dealt in apothecary wares to an extent which alarmed the Society. In 1721 the apothecaries approached the College suggesting they should join together in the regulation of pharmacy. They did not receive the support for which they had hoped, the physicians saying that they were of the opinion that adequate powers were already held by the College and the Society for dealing with the problem. In spite of this statement two years later the physicians decided to promote a Bill of their own asking for new powers, "to search the shops of druggists and chymists and all vendors of medicines as they do now apothecaries."²¹⁷ The apothecaries petitioned against it on the grounds that no medicines should be destroyed without the agreement of their own wardens as the physicians were incompetent to judge faulty drugs. The Bill however passed without the apothecaries amendment in May 1724 (10 George I, c.20). The Act was limited to a period of three years.

It was renewed in 1727 in spite of further opposition by the Company who even went so far as to think of testing the physicians expertise in the assessment of drugs. Again the Act had a three year limit imposed on it. When it came up for a further renewal in early 1730 the apothecaries made it known that they would only let it go forward unopposed if their wardens were granted an equal share of power. They had been recently rather aggressive to the College in as much that the master had

refused the censors entry when they came to search his shop.²¹⁸
 Probably the Society knew it was on fairly safe ground and that their accusation of incompetence was well founded as when James Goodwin, chemist and apothecary, (though not a freeman of the Company) appealed to the whole College against the decision of the censors to burn five of his preparations, type-specimens had to be obtained from Apothecaries' Hall.²¹⁹ The physicians refused to concede anything to the Society but in any case the Bill failed and the Act expired.

After these tests of strength the two parties settled down to a period of peace, the physicians sensibly mainly confining themselves to work on the fifth, improved pharmacopoeia which saw the light of day in 1746.²²⁰

For the apothecaries however the problem of the chemists and druggists did not fade but became evermore pressing. In 1724 soon after the physicians had procured their Bill, they contemplated promoting an Act themselves, 'for a General View of Medicines over England' which included arrangements for co-operation with apothecaries in other cities.²²¹ This could have had desirable consequences but would have been extremely difficult to operate. The idea was revolutionary though in as much that a London based body even contemplated delegating some of its powers to those outside London and its suburbs. After two years of preliminary work the proposal was dropped not to be revived until 1746.

It is obvious from the declining numbers of the Society in 1746 that there were many apothecaries practising in London who were not members of the Company. In order to coerce them into joining, the court of assistants ordered the drafting of a Bill,

"to oblige all apothecaries and other persons making and keeping medicines for sale within the limits of the Company's charter, to be examined and admitted members of this Society."²²²

Apart from bringing wayward apothecaries into the fold, chemists and druggists were to be forced to become brethren. Powers of search in all such establishments were also sought. The useless exercise of seeking the College's co-operation was not entered into; when they showed the proposed Bill to the physicians they received the not unexpected reply that such an attempt would be opposed. Presumably the reason being that they feared any further augmentation in the numbers of those whom they must still have regarded as unqualified medical advisers.

Naturally the Bill was opposed by the chemists and druggists but it was not their efforts which caused its failure, but rather the physicians underground attempt to revive and make perpetual the act of 1724, which put the apothecaries in the extraordinary position of having to fight what should have been their own Bill. Parliament was prorogued before any final decisions were made.

The Bill was particularly remarkable in showing that there were efforts being made to band the apothecaries together on a national basis. After the petition from the Company which was supported by a similar application from the non-freemen of Westminster and the City, there were in quick succession from the apothecaries of Chester and Shrewsbury petitions in which they added the suggestion that legislation should be extended to the rest of the country. From the examination of witnesses there would seem to be little doubt that it was normal practice for the

chemists and druggists to send their inferior materials to country apothecaries. One witness, William Watson, apothecary, (later Sir William, M.D.) botanist and experimenter in electricity, was of the opinion that two-thirds of the medicine used in the country originated in London and that the bulk of the trade was in the hands of the chemists and druggists.²²³

The number of shops involved is also of interest.

John Staples, the beadle of the Company, related that the Society's searchers visited once a year all apothecaries' and chemists' shops, whether they belonged to freemen or 'foreigners' in the area of the Company's charter and they amounted to some 700, at least half of which did not belong to men free of the Company. He added that the druggists' shops did not receive such visitations and he had not included them in his figures.²²⁴ If these figures bear any relation to reality the size of the problem facing the apothecaries was immense; for the physicians it was even worse and it may well have been a relief that their revived Bill of 1748 came to nought.

The first half of the eighteenth century was not a period of great activity for the physicians, and their relationship with the surgeons was even quieter than it was with the apothecaries.

The attempted Bill of the Barber-Surgeons of 1689-90

The surgeons began to feel that their future no longer lay with the barbers but as a separate body, so in 1684 when they had to surrender their charter to Charles II they petitioned for a new charter giving them a separate existence.²²⁵ Nevertheless when James II restored all company charters in 1688 it was given to the Barber-Surgeons' Company unchanged. The following year

the barber-surgeons promoted a Bill which would give at long last statutory authority to the charter of 1629, in particular they wanted parliamentary confirmation of the clause which gave them a monopoly in London and for seven miles around.²²⁶ The surgeons also wished to be the sole examining and licensing body for their fellow surgeons, the episcopal powers of the act of 1511 having become an ever greater irritation. Once again they tried to obtain the right to give internal medicines in all surgical cases, of which the physicians wrote bitterly, "by pretence of blistering, cupping bleeding, applying leeches etc. there is scarce a fever or any disease which they do not account a surgical case", which is probably why the surgeons now demanded that the physicians should consult with them in all cases, the emphasis having been subtly shifted from the surgeons being obliged to call in a physician if they deemed an internal medicine necessary.²²⁷

The surgeons claimed that they had once had these powers and had "used surgery in all its parts without any interruption from the College" until the first year of James I.²²⁸ In any case it was essential in order to make them more efficient in the King's service at sea. The administration of internal medicines evoked the wrath not only of the physicians but of the apothecaries as well and the Bill failed.²²⁹ When the surgeons made another attempt in 1705-6 they took the precaution of previously conferring with and making an agreement with the apothecaries, but still the Bill did not get beyond a second reading.²³⁰ The barber-surgeons had also been desirous of being made responsible for examining the surgeons' mates and surgeons for the army as they already did

for the navy and this proposal had been added to the Bill.

From this time forward the College paid little attention to the surgeons.²³¹

The Separation of the Surgeons from the Barbers

Just about the time the apothecaries were contemplating promoting their unsuccessful Bill of 1748, a major development occurred in the lives of the London surgeons. In 1745 the surgeons separated from the barbers and became an independent body. An anonymous writer to the master, wardens and court of assistants of the Surgeons' Company wrote that, "the separation of the Surgeons from the Barbers had been urged on the ground that it would enrich the Company and make it more respectable by restricting the practice of surgery to men of liberal education and of examined and approved ability."²³² There were in fact other considerations, such as the resentment of the wealthy hospital and royal surgeons, as well as of the rank and file, that the bulk of the money in the poor-box went to sustain indigent barbers.²³³ Also the surgeons had little love towards the City and no particular desire to be part of a City livery company consequently they resented the high cost of civic functions.²³⁴

The surgeons encountered no opposition from the apothecaries or the physicians in their bid for separation, but there was a certain amount from the barbers.²³⁵ They maintained that when Edward IV in 1462 granted the charter to the barbers most of the freemen were surgeons and so it was only reasonable that their Company should have the control and examination of the practice of surgery.²³⁶ In 1540 at the amalgamation of the Barbers' Company and the unincorporated surgeons, the latter

gained considerable wealth whilst, "the Barbers lost the exercise of a profession much more profitable than their own."²³⁷

The two petitions were examined by a committee of the House of Commons. It concurred in the view that "the Barbers of London had been incorporated by Edward IV, not as Barbers but as Surgeons," or as D'Arcy Power phrases it, "The surgeons appear at first as members of a profession unable to combine in their own interest and collectively penniless. The Barbers, who did not profess to be more than tradesmen and were the general practitioners of the time, were well-to-do and had become a powerful corporate body. They allowed the surgeons to join them. ..." ²³⁸ No evidence is given to support these views.

The parliamentary committee was of the belief that the act of 1540 was intended to disseminate the knowledge of surgery by reason of the barbers and surgeons often assembling together, but as it was at the same time enacted that the two crafts should be kept quite distinct the hope could obviously not be fulfilled.²³⁹ The result of the committee's deliberations was favourable to separation, and the Bill received the royal assent on 2 May 1745, only three months after the first petition. During its passage there were two additions made: one that the new company was now to be responsible for examining the army's surgeons' mates, and secondly, that all those free of the Company were exempt from watch and ward and all parish duties.²⁴⁰

Perhaps because of this swift passage through Parliament the act of 1745 was loosely drawn up and left many loopholes and points which required clarification. The following year the new Company sought counsel's opinion as to whether they were:-

- 1) Still to be considered as a livery company?
- 2) Were exempt from bearing arms and serving in the militia?
- 3) Whether surgeons who had passed an examination could practise in the City without taking up its freedom?
- 4) Could they compel intending and practising surgeons to be examined by the court of examiners of the Company?

C. Erskine replied that it would seem that the Company was intended to be a livery company but the situation was not at all clear.

As for the second question, members were exempt from militia service, but in fact the act of 1757 did not include surgeons amongst those exempted and Charles Pratt in 1759 was quite definite that they were not entitled to exemption. Thirdly Erskine believed that all examined and approved surgeons were allowed to practise without interference in any city, any charters or customs notwithstanding.²⁴¹ The fourth point was the most important and had the greatest effect on the future of the profession. As the charter of 1629 had never received statutory confirmation, and as the act of 1745 did not confirm that clause of 1629 which forbade the practise of surgery in London and its suburbs by those who had not been examined at the Barber-Surgeons' Hall, it was found that the new company had no power to compel persons to be examined for their fitness to be surgeons.²⁴²

A new set of bylaws was drawn up in 1748 to replace the revised ones of 1709. The earlier regulations stated that surgeons' apprentices had to pass an examination in Latin at the Hall before they could be bound, and that after seven years servitude the apprentice had to appear before the court of examiners.²⁴³

Amongst the new bylaws was one demanding evidence of a knowledge

of Latin from apprentices bound at the Hall. This was enforced on at least two known occasions, in 1759 and in 1763.²⁴⁴

Although apprenticeship was recognised as the best method of entering surgery, after the act of 1745 the court of examiners was lax in demanding proof of the full seven years having been completed.²⁴⁵ Increasingly the idea grew that the surgeons were not bound by the Elizabethan Statute of Apprentices of 1563 which demanded a seven year apprenticeship, because the earlier act of 1511 pertaining to surgeons which required examination but did not mention apprenticeship, had not been repealed.²⁴⁶ In 1781 the Company once more sought counsel's opinion. He held that surgeons were regulated by the act of 1511 and that there was no necessity for obedience to the Elizabethan act.²⁴⁷ In fact this was only recognition of something which had been customary for years, even though the 1511 act had long ceased to be operative.²⁴⁸

In 1749 an Act was passed which was to have a great influence on the practice of medicine and surgery in England. This Act allowed, "such officers, marines and soldiers as have been in His Majesty's service since the accession of George II to set up in trade without any let, suit or molestation," even though they had served no apprenticeship.²⁴⁹ The Company owing to the looseness of the 1745 act was in no position to enforce the examination of such men who practised as surgeons, nor could they exact any penalty, which unfortunate situation was fully confirmed by Sir Dudley Ryder.²⁵⁰

In 1763 another Act extended the exemption to those who had been in the services since 1749, and went so far as to include their wives and children as well. The situation was now clearly

impossible and counsell's opinion was again obtained.

Charles Yorke and James Wallace backed the opinion of Ryder and said the Company had no chance of compelling these men (and women) to take the grand diploma examination which was awarded after a seven year apprenticeship had been satisfactorily concluded. The only person to differ was Sir Fletcher Norton who said that the act 22 George II was not applicable in this situation, and furthermore he did not believe that a certificate given to qualify for employment as a surgeon's mate in a man-of-war was sufficient for shore and civilian practice. He agreed with the Company that this certificate was only evidence of the ability of the military or naval recruit to learn surgery under an experienced surgeon.²⁵¹

In consequence of these Acts it was far easier, cheaper and quicker for a man to join the services for a short time and then retire to civilian practice.²⁵² The final result was, that these retired officers who had paid only a very small fee for their examination and certificate at the Surgeons' Hall, did not pay a fine for freedom of the Company or any quarterage, could freely compete with regularly authorised surgeons and could flout the bylaws with impunity. They may or may not have received further and satisfactory instruction from their superior officers before promotion but there was no proof one way or the other.²⁵³ The situation was thoroughly unsatisfactory.

The Company contemplated a test case in 1773²⁵⁴ but was wise enough not to pursue the matter, especially as eleven years later in 1784 yet another Act was passed which gave retired soldiers and sailors the right to practise their calling without the permission

of corporate bodies within whose jurisdiction they lived.²⁵⁵

By the time the first three quarters of the eighteenth century had passed the neat boundaries and spheres of influence of the sixteenth and seventeenth centuries beloved of many medical historians had long faded away.²⁵⁶ The physicians had failed to control the apothecaries, the apothecaries gave up all attempts to control the chemists and druggists, and the surgeons lost their fight to control the retired army and naval surgeons.

Notes and references.

1. G.E. Trease, Pharmacy in history, London, Baillière, Tindall & Cox, 1964, pp.49,50.

2. Ibid., p.50.

3. G.E. Trease, 'The 'spicer-apothecary' of the Middle Ages', The future pharmacist, 1957, 26:56.

The two terms 'apothecary' and 'spicer' seem to be quite differentiated by the time of Edward IV.

In his household the 'potycary' was told that "the payment of his medycyns and ingredients [were] payde of the jewelhouse by oversight of [the] physician and by audit of [the] chamberlain of the king." On the other hand the chief master clerk of the 'Office of grete spycery' "hath purveyance of all manner stuff belonging to this office and to thoffice of confeccionary, to the office of chaundry and thoffice of napery, as for wax, wicks, almaner spicery be weightes, napry and alle other lynen cloth by the ell, also parchmyne pauper, figs, apples and other fruit." There was no mention of medicines. See, A.R.Myers, The household of Edward IV, Manchester, University Press, 1959, 2nd edition, pp. 125,186.

4. L.G. Matthews, History of pharmacy in Britain, Edinburgh, E.S.Livingstone, 1962, p.31, quoting Henry II, Rot. II m.2d., Pipe Roll Society, XXIX, 1908-26.
5. Trease, (1957), op.cit., p.54.
6. Trease, (1964), op.cit., pp.45,46.

7. Ibid., p.44.
8. Ibid., p.56. It is interesting to note that the conditions of the royal apothecaries of the household of Edward IV are as carefully itemised as those of the royal physicians and surgeons, (See, A.R.Myers, op.cit. pp.123-5) but the position is not even mentioned in the Ordinances of York of 1318. See T.F. Tout, The place of the reign of Edward II in English history, Manchester, University Press, 1936, 2nd. edition, pp. 251-52.
9. Trease, (1957) op.cit. p.58.
10. The prior of Lenton Priory made an agreement with the burgesses of Nottingham in about 1300 that those cloth merchants, apothecaries, pilchers and mercers of the town who wished to do so, could hire booths at the fair held at the gates of Lenton Priory. See, Trease, (1957), op.cit., p.55.
11. Matthews, op.cit., p.33.
12. W.C. Hazlitt, The livery companies of the City of London, London, Swan, Sonnenschein & Co., 1892, p.126.
13. W. Herbert, The history of the twelve great livery companies of London, Newton Abbott, David & Charles facsimile, 1834, 1:230.

The connection between provincial apothecaries and mercers which has been detected by both Trease (Trease, (1964), op.cit., p.102) and Whittet can be traced back to the thirteenth century. 'Mercer' in ancient times was the name for a dealer in small wares,

and not, as afterwards a vender of silks.

"Merceries then comprehended all things sold retail by the little balance or small scales, (in contradistinction to things sold by the beam or in gross) and included not only toys, together with haberdashery and various other articles connected with dress, but also spices and drugs: in short what constitutes the stock of a country general shopkeeper."

See, Herbert, op.cit., p.230.

14. Ibid., p.43.

15. Trease, (1964) op.cit., p.62.

16. Ibid., p.63.

17. Ibid., p.62. Herbert derives the term 'mystery' from 'mestiere' meaning 'craft, art or employment'.

See, Herbert, op.cit., p.45.

18. Trease, (1964) op.cit., p.62.

19. Ibid., p.65. The corders of the Ropery dealt in ropes and cords for sails, to which they gradually added the sale of canvas and sail-cloth. They were eventually merged into the grocers.

See, Hazlitt, op.cit., p.111.

20. Hazlitt, op.cit., p.671.

21. Matthews, op.cit., p.35.

22. The difference in weight of the pounds used by the grocers and and spicers does not seem to have been maintained. Trease quotes a proclamation made in London in 1372 that, " ... no one sell grocery, spicery, drugs etc., except by the Guildhall weight, vizt. 15 ounces to the pound." See, Trease, (1964) op.cit., p.65.

23. Hazlitt, op.cit., p.130. Herbert is of the view that it was only of recent origin in 1361 as in an Act of 37 Edward III (1363) there is a reference to a petition to the Commons in 1361 using the phrase, "Those merchants called 'grossiers' who were accused of having " ... by covin, and orders made amongst themselves in their fraternities or gilds engrossed all sorts of wares, whereby their habits of engrossing or because " ... they usually sold in gross quantities in great weights" is a moot point. (Herbert, op.cit., pp. 308,305,304.)
24. William de Eynsham and John de Ho, two pepperers, were in 1365 appointed the representatives of the 'mistry of Grossers, Pepperers and Apohecaries of Sopers-lane, the Ropery, Chepe and Bokelesbury." Herbert, op.cit.p.308; Trease, (1964) op.cit., p.63.
25. Trease, (1964) op.cit., p.63.
26. Herbert, op.cit., p.309. 10 October 17 Ric. II (1393).
27. Trease, (1964) op.cit., p.65.
28. Ibid., p.65.
29. Herbert, op.cit., pp. 310,311.
30. Ibid., p.311.
31. Ibid., Charters and Grants. Unpag. The grocers had had a licence to hold their gild in 1353 (27 Edward III) but there is no patent amongst the patent rolls.

32. Ibid., p.326.
33. Calendar of Patent Rolls, (1448), p.107.
34. Herbert, op.cit., p.311.
35. Trease, (1964) op.cit., p.69.
36. Hazlitt, op.cit., p.189.
37. Herbert, op.cit., p.47.
38. Hazlitt, op.cit., p.347.
39. C. Wall, H.C. Cameron & E.A. Underwood, A history of the Worshipful Society of the Apothecaries of London, Oxford, University Press, 1963, 1:9.
40. Ibid., p.9.
41. Herbert, op.cit., p.326.
42. Cameron, op.cit., p.9.
43. Herbert, op.cit., p.314.
44. Ibid., Charters and Grants. Unpag.
45. Cameron, op.cit., p.10.
46. Ibid., p.11.
47. Ibid., p.12.
48. Ibid., p.20.
49. Ibid., p.13.
50. The jurisdiction of the grocers only extended to three miles.
See, Herbert, op.cit., pp.375-6.
51. Cameron, op.cit., pp.13.14.
52. Ibid., p.16.
53. Ibid., p.17.
54. Herbert, op.cit., p.326.
55. Cameron, op.cit., p.20.
56. G. Clark, A history of the Royal College of Physicians of London, Oxford, Clarendon Press, 1964, 1:7.

57. Hazlitt, op.cit., p.361.
58. T.F. Tout, The Place of the reign of Edward II in English history,
Manchester, University Press, 1936, 2nd edition,
pp. 251-2.
59. J.F. South, Memorials of the craft of surgery, (editor) D'Arcy Power,
London, 1886, p.15, quoting Letter Book G.,
f.xviii.
60. 37 Edw. III c.vi. See Statutes of the Realm, London, 1810,
1:379-80.
61. R.R. Sharpe, (editor), Calendar of the Letter Books ... of the
archives of City of London, London, 1889-1912,
Letter Book G.
62. Clark, op.cit., p.12.
63. Hazlitt, op.cit., p.361.
64. South, op.cit., p.16, quoting Letter Book G. f.219.
65. Ibid., p.18.
66. Ibid., p.19.
67. Ibid., p.19, quoting Letter Book H. f.27b.
68. Clark, op.cit., p.12.
69. Hazlitt, op.cit., pp.12-13.
70. Clark, op.cit., p.12.
71. South, op.cit., pp. 15-16.; A.S. Young, Annals of the Barber-
Surgeons' of London, London, Blades, East &
Blades, 1890, p.36.

Unwin however gives the date of 1353.
See G. Unwin, The guilds and companies of London,
London, Frank Cass, 1963, 4th edn., p.88.

72. Clark, op.cit., p.81. Earlier in 1469 its name occurs as being one of the companies liable for guarding the gates, though a note is added to say they did not in fact participate. It was described in 1502 as one of the 28 bodies without a livery. See, Hazlitt, op.cit., p. 145.
73. Young, op.cit., pp.36,38.
74. They presented a copy of their grant of 1375 and it was unanimously agreed that the Barbers " ... should for ever peaceably enjoy the privileges contained in the ordinance without scrutiny of any person of other craft or trade than barbers. And this neither in shavings, cutting, bleeding, nor other things in anyway pertaining to barbery or to such practice of surgery as is now used ... "
- See, South, op.cit., p.21.
- This has been interpreted by Young as being, " ... directed against the masters of the Surgeons' Gild who had sought to exercise their authority over the barbers using the faculty of surgery."
- See, Young, op.cit., p.39.
75. South, op.cit., p.22, quoting Letter Book I, f.149b.
76. Ibid., p.24.
77. Clark, op.cit., pp.13,18.
78. Ibid., p.13.; South, op.cit., Appendix D.

80. Hazlitt, op.cit., p.363. From 1448 the Company had been ruled by four masters, the other two being masters of the barbers about whom nothing is said in the charter.
81. Ibid., p.363. In the muster for the watch in 1469 it was assessed at 120 men and Young wrote that it had more members than any other City company in 1537. See Clark, op.cit., p.13.
82. Clark, op.cit., p.54.
83. Statutes of the Realm, London, 1817, 3:32.
84. F.C. Emmison, Elizabethan life - morals and the church courts, Chelmsford, Essex Record Office, 1973, p. 317-18.
85. J.H. Bloom & R.R. James, Medical practitioners in the diocese of London licensed under the Act of 3 Henry VIII: c.ii., Cambridge, University Press, ^{1935,} p.9.
86. Clark, op.cit., p.78, The powers were normally exercised for the archbishop by a functionary known as the Master of Faculties.
87. Ibid., p.57.
88. Ibid., p.84.
89. Hazlitt, op.cit., p.364.
90. C. Wall. The history of the Surgeons' Company, 1745-1800, London, Hutchinson's Scientific & Technical publications, 1937, p.20.
91. Clark, op.cit., p.84.
92. Ibid., p.84, quoting C.H. Cresswell, The Royal College of Surgeons of Edinburgh.

93. The court minute for May 1620 reads, "Thursday after Whitsonweeke
was appointed for the Simpline Daie ..."
See, Cameron, op.cit., p.88.
94. L.Z. Zimmermann, "Surgery" in A.G. Debus (editor), Medicine in
seventeenth century England, Los Angeles,
University of California Press, 1974,
pp. 49-69, see p.50.
95. Clark, op.cit., pp.86-7.
96. Emmison, op.cit., p.319. The Act book relates that in 1580
George Wright admitted that he had practised
as surgeon but pleaded he had only exercised
surgery for his neighbours.
97. Matthews, op.cit., p.31, quoting 37 Edwd. III c.vi in Statutes of
the Realm, 1810, 1:379-80.
98. Herbert, op.cit., p.30.
99. He holds this view because in 1385 the mayor of London disfranchised
seven freemen for following trades to which they
had not been trained; two haberdashers
had been occupied with mercery and a tailor
was busy as a draper. Even their friends,
who had known of their misdemeanours but not
reported them, were likewise deprived of their
Franchise. See Herbert, op.cit., p.30.
However Letter Book G definitely states,
"The same day [28 October] 39 Edward III [1365]
it was ordained that if any one has been
admitted to the freedom of the City in some
one mistery, and afterwards wish to pursue

some other mistery, he shall be allowed to do
so, and to trade in all kinds of merchandise
at his will without any hindrance etc."

See, Calendar of the Letter Books.,

Letter Book G. p.203.

100-10. T.D. Whittet, 'The apothecary in English provincial guilds',
The West African pharmacist, 1963, 5:31-3.

105. Ibid., p.33.

106. Matthews, op.cit., p.38.

107. C. Haskins, Ancient trade guilds and companies of Salisbury,
Salisbury, Bennett, 1912, pp. 80,364.

108. Matthews, op.cit., p.38.

109. Haskins, op.cit., pp. 365,367.

110. Trease, (1964) op.cit., p.39.

111. Ibid., p.39.

112. Ibid., p.50; Clark, op.cit., p.17.

113. Clark, op.cit., p.17.

114. Ibid., p.22.

115. Ibid., p.14.

116. Ibid., p.14.

117. S. Gibson (editor), Statuta antiqua Universitatis Oxoniensis,
Oxford, The Clarendon Press, 1931,
pp. lxxxviii-ciii.

The Cambridge statutes of 1570 no longer made
an M.A. obligatory, but required a student to
study six years for an M.B. with a further five
years for an M.D. - eleven years in all.

See, F.N.L. Poynter & W.J. Bishop, 'A

seventeenth century doctor and his patients:

John Symcotts', Beds. Hist. Rec. Soc. Pubn.,

1951, 31: Introdn. p.xiii.

118. Clark, op.cit., p.15.
119. South, op.cit., pp.50-1.
120. Clark, op.cit., p.28.
121. Ibid., pp.26-7.
122. Ibid., p.27.; South, op.cit., appendix B.
123. Clark, op.cit., p.28.
124. There are examples however of one man practising both disciplines, for example William Hobbys. (See p.104 for further discussion.)
125. Clark, op.cit., p.18. It is likely that this John Smythe was, nearly thirty years later (1529), one of the physicians chosen to examine surgeons for a licence under the act of 1511, although the Act did not demand that a physician should be an examiner. See Clark, op.cit., p.57.
126. Ibid., p.60.
127. Ibid., p.61. The term 'fellow' was not used before 1540.
See Clark, op.cit., p.70.
128. Ibid., p.71.
129. Ibid., p.77.
130. Ibid., p.123. Leverett was a medical practitioner to the Rutlands of Belvoir: "1541. Item: given in reward to Mr. Leverett for mynysting medecyne to my Lord Roos when he was seke, 10s., and for the like mynystryng to Maistress Margaret Paston in her sekenes. 22s.6d." See, Hist. Mss. Comm. Report, 'The Rutland Mss.', 4: 315.

131. Cameron, op.cit., pp.108-9.
132. City of London Record Office, Act of Common Council of
28 April, 1525, Journal 12,f.281.
133. Clark, op.cit., p.80.
134. Ibid., p.81.
135. Ibid., pp.82, 85.
136. Ibid., p.122.
137. Ibid., p.150.
138. Ibid., pp. 250-1.
- 138a. Ibid., p.83.
139. Ibid., p.83.
140. Ibid., p.88.
141. Ibid., p.119.
142. Ibid., pp. 160-1.
143. Ibid., p.229.
144. Ibid., pp. 156-7. Venereal diseases were treated by surgeons
because of their external manifestations.
145. Ibid., p.207.
146. Wall, op.cit., p.23.
147. See p.46.
148. Clark, op.cit., p.231.
149. Ibid., p.243.
150. Ibid., p.265.
151. Ibid., pp. 242,265.
152. Wall, op.cit., p.24.
153. Cameron, op.cit., p.36.
154. Ibid., p.316.
155. See p.15.

156. Clark, op.cit., p.268.
157. Ibid., p. 269.
158. Fortunately the apothecaries soon adopted a more reasonable attitude and there is an entry in the court book for July 1640 which states that dangerous drugs for example antimony and calomel were not to be sold. See, C.R.B.Barrett, The history of the Society of Apothecaries of London, London, Eliot Stock, 1905, p.58.
159. Cameron, op.cit., p.47.
160. Clark, op.cit., p.269.
161. Cameron, op.cit., p.48.
162. Clark, op.cit., p.220.
163. Cameron, op.cit., p.51.
164. Clark, op.cit., p.270.
165. Ibid., p.272.
166. Cameron, op.cit., p.93.
167. Ibid., p.42.
168. Ibid., p.119.
169. Clark, op.cit., pp.252,285.
170. Ibid., p.286.
171. C.R.B. Barrett, History of the Society of Apothecaries of London, London, Eliot Stock, 1905, p.86.
172. Ibid., p.61.
173. Cameron, op.cit., p.99.
174. Barrett, op.cit., p.86.; Cameron, op.cit., p.149.
175. Clark, op.cit., pp.277,280.

- 176. Ibid., pp.134-5.
- 177. Ibid., pp.313-5.
- 178. Ibid., pp.316.
- 179. Ibid., p.340.
- 180. Ibid., p.348.
- 181. Ibid., pp.357, 372.; Cameron, op.cit., p.355.
- 182. Clark, op.cit., p.305.
- 183. Ibid., p.307.
- 184. Ibid., p.307.
- 185. Ibid., p.308.
- 186. Ibid., p.343.
- 187. Cameron, op.cit., p.358.
- 188. Ibid., p.345.
- 189. Ibid., p.344.
- 190. See p. for discussion on titles.
- 191. Cameron, op.cit., p.120.
- 192. Ibid., p.102.
- 193. Clark, op.cit., p.355.
- 194. Ibid., p.359.
- 195. Ibid., p.359.
- 196. Hewk was an acquaintance of Robert Hooke, see his diary.

H.W. Robinson & W. Adams (editors),
The diary of Robert Hooke, London,
 Taylor & Francis, 1935.

- 197. Clark, op.cit., p.352.
- 198. Cameron, op.cit., p.379, quoting from the Society's court minute
 book, 7 October 1675.; Clark, op.cit., p.434.

199. Barrett, op.cit., p.100.
200. Cameron, op.cit., p.363.
201. Clark, op.cit., p.367; Cameron, op.cit., p.364.
202. Clark, op.cit., p.368. The fact that Witherley's daughter,
Bridget, married the apothecary Thomas Bromfield
in 1677 may have had a bearing on the matter.
See, T.D. Whittet and J.G.L. Burnby,
Plague, pills and surgery, the story of the
Bromfields, Enfield, Edmonton Hundred
Historical Society, 1975, p.4 and pedigree.
203. Clark, op.cit., p.356.
204. Cameron, op.cit., p.125.
205. Clark, op.cit., pp.442-3. The Act of 6 & 7 Wm.III c.4 was renewed
in 1702 and 1712 and made perpetual in 1722.
206. Guildhall Library, Apothecaries' Society Court Minutes,
Ms.8,200/2,f.39r.; Ms. 8,200/3,f.260.
207. Cameron, op.cit., p.127.
208. Clark, op.cit., p.446.
209. Ibid., pp.443,445.
210. Cameron, op.cit., p.129.
211. Ibid., p.130.
212. Ibid., p.83.
213. Charles Bernard, surgeon at St. Bartholomew's hospital, was
sergeant-surgeon to Queen Anne, and master of
the Barber-Surgeons' Company. He was a close
friend of John Watts, apothecary and curator
of the Chelsea Physic Garden. See
J.G.L. Burnby & A.E. Robinson,

And they blew exceeding fine, Robert Uvedale
1642-1722, Enfield, Edmonton Hundred Historical
Society, 1976, appendix A pp.16-17.

214. Cameron, op.cit., pp.154-5.
215. Ibid., pp.133-5.
216. Clark, op.cit., pp.490-1.
217. Cameron, op.cit., p.184.
218. Clark, op.cit., p.495.
219. Ibid., p.495.
220. Ibid., p.497.
221. Cameron, op.cit., p.185.
222. Ibid., p.186.
223. 'Attempted legislation in 1748', Chem. & Drugg., 1926, 105:198-9.
224. Ibid., pp.198-9.
225. Wall, op.cit., p.25.
226. Ibid., p.26.
227. British Library, Surgeons' bill now before the House of Commons.

Bill read 24 January 1690. B.L. ref 777K.16(15).
228. Ibid.,
229. Wall, op.cit., p.26.
230. Ibid., p.26.
231. Clark, op.cit., p.500.
232. Wall, op.cit., p.146.
233. Ibid., p.36.
234. Ibid., p.52.
235. Ibid., p.40.
236. Ibid., p.32.
237. Ibid., p.20.

238. Ibid., p.15.

239. Ibid., p.34.

240. Ibid., pp.40-1.

241. Ibid.; pp.45-7.

242. Ibid., pp.42,47.

243. Ibid., p.49.

244. Ibid., pp.55-6.

245. Ibid., pp.57,117.

246. Ibid., p.52.

247. Ibid., p.117.

248. Ibid., pp.42,137. By the terms of the 1745 Act the bishops could not prevent the diplomates of the Company practising.

249. Ibid., p.138.

250. Ibid., p.139.

251. Ibid., p.142.

252. Ibid., p.56.

253. Ibid., p.143.

254. Ibid., p.144.

255. Ibid., p.149.

256. Cameron, op.cit., p.188. Writing of a period as late as the 1770's Cameron states, "The healing art was still looked upon as divided into separate territories presided over by different corporations and none must encroach upon the other. The surgeons ruled their own domain and no apothecary must venture to conduct the most trivial surgical procedure."

SECTION IICHAPTER IIntroduction

The apothecary of the early years of the eighteenth century was able to trace his descent back through the druggists and apothecaries of the Grocers' and Apothecaries' Companies to the spicers and spicer-apothecaries of the Middle Ages, but he had also, in more recent years, been greatly affected by practitioners of two other disciplines, namely the surgeons and the newly arrived 'chymists'. Indeed these influences might be regarded as the two poles of the apothecaries' professional life, with the sale of drugs being common to both. The fourth component, the dispensing of prescriptions, the touchstone of the apothecaries' work, was to become, and still is, the scene of battle. Increasingly the medical apothecary gave up his open shop though he did not relinquish his dispensing, whilst at the same time the chemist and druggist became ever more eager to include it amongst his skills.

In comparison with the physician, the apothecary was a practical man, he was too a man of the scientific revolution of the late seventeenth century. Many, if not all, the roots of the ever finer divisions of medicine, science and pharmacy can be detected in the fertile soil of apothecarial practice. It is not too much to claim that the origins of the general practitioner, the dispensing druggist, the experimental and manufacturing chemist and the pharmaceutical wholesaler and manufacturer are to be found with the apothecaries of the period under discussion.

THE GENERAL PRACTITIONER (a)

Zachary Cope has written of the general practitioner that "until recently [1961] we might have defined a general practitioner as one who practised medicine, surgery and midwifery, prescribed and in many instances dispensed medicines, and more than other members of the profession, had the continuous care of patients."¹ As a term it would seem to have been first used in 1812 when Samuel Fothergill, discussing the apothecary, wrote, "Those who practise pharmacy alone are few in number compared with those who exercise all the branches of the profession. Every city, every town, and almost every village in England and Wales, presents one or more of these general practitioners: but will they be legally designated by the term apothecary? ... The term Apothecary is too restricted, no definition will make it comprehend the Surgeon and Accoucheur ... The mixed practitioners ... who make up nearly the whole of the country medical faculty, and a great majority of those in the town, must be designated, legally, by some new term."² The term general practitioner did not come into common usage until 1830, about the time of the Hardey versus Hensen case. The Metropolitan Society of General Practitioners in Medicine and Surgery under the presidency of William Gaitskell was instituted the same year.³

It is generally conceded that the general practitioner of the nineteenth century was derived from the apothecary of the eighteenth. One writer in 1818 spoke of "the practice of the apothecary or general practitioner" and in 1845 the Society of Apothecaries addressed its members as "the General Practitioners of England and Wales."⁴ Nevertheless his origins must lie also, at least

in part, with the surgeons, in particular those who had served in the army, navy or the East India Company.

A general practitioner in essence is one who practises as both apothecary and surgeon, the former's work encompassing both physic and pharmacy.⁵ This amalgamation of the three disciplines is acknowledged to have been far advanced by the latter half of the eighteenth century. Clark writes, "Apothecaries do not seem to have been troubled about their own anomalous relations with the surgeons.. There were a good many people who practised both pharmacy and surgery, sometimes with a sound training in both branches, and less frequently, even with a formal qualification in both. Their numbers were growing. The name of surgeon-apothecary was coming into use. Even in London the practitioners of first instance were increasingly disposed to undertake every kind of practice."⁶

This was undoubtedly the trend of the times. In May 1761, John Aiken, lecturer at Warrington Academy, was endeavouring to settle his son in life, and wrote, " ... we have therefore determined on physic, and as it grows pretty common to unite the two professions of apothecary and surgeon I could wish my son were placed where he has opportunities of learning both these branches, though I would have the principal attention given to surgery and midwifery."⁷ In fact this union of the two branches had been taking place for many a year but was only now being recognised.

The Apothecaries' Society's Court Book for 5 March 1717 records that a freeman of the Company, a Mr. Parsons, had been summoned by the Barber)Surgeons' Company for performing venesection, which gives all the appearance of a corporate body making every endeavour

to maintain the rigid boundaries laid down in its charter.⁸
 Yet only six years later (1723) a man called Horseman is
 described in the annals of the College as an apothecary and
 surgeon.⁹

Nor is the description to be found only in the eighteenth
 century. Edward Randal, accused of malpractice by the College
 on 5 March 1658, was termed a 'chirurgus-pharmacopoeus'.¹⁰
 In the list of over 350 licences issued in the diocese of London
 under the act of 1511 (3 Henry VIII, c.2) from 1529 to 1725
 made by Bloom and James, there are three men who were specifically
 licensed to practise as both apothecary and surgeon:-¹¹

- 1) Robert Hitchcox of Ware, 1662.
- 2) George de Folleville of Cheshunt, 1693, a French refugee.
- 3) John Harris of Whitechapel, 1700. Harris was certified to
 have been admitted as a foreign brother to the Barber-Surgeons'
 Company. In Harris's 'subscription' to the ecclesiastical
 and political doctrines of the day, dated 31 January 1700,
 he is termed a surgeon.¹²

There were also seventeen licensed as 'physicians and surgeons',
 who were men living as might be expected in towns remote from the
 capital, such as Harwich, Colchester and St. Albans. Whether
 these 'physicians' really shunned apothecarial work is impossible
 to say but it would seem to be unlikely.

It is probable that many who obtained licences for the
 practice of surgery would in fact have had a mixed practice. One
 of the churchwardens of Enfield, Middlesex received £40 on
 23 July 1746 from which was to be paid, "To Mr. Joseph Wilson
 for his salary as Surgeon and Apothecary to the Parish, £21.0.0,"

yet according to Bloom and James his licence obtained on 26 November 1724 described him as 'Joseph Wilson of Enfield, surgeon.'¹³

The subscription books for the diocese of London also indicate that licences were given to those who intended to practise medicine and surgery together. There were three such mixed practitioners in the years from 1627 to 1644, and fifteen from 1663 to 1683.¹⁴ The licences for most, but by no means all of these subscribers, are to be found in the lists made by Bloom and James. From 1627 to 1719 there are fourteen entries not to be found in the latter book.¹⁵ There are also certain other discrepancies.

At the time of his subscription on 28 October 1675, Gonsal Gerardes was said to be admitted to practise, "Artes Med. et Chir." but his licence of the same date indicates that Ge[e]rards of the Hague was more likely, at least originally, to have been a surgeon only. The translation of his recommendation read, "The Master and Governors of the Surgeons' Company at the Hague, at the request of Gonsal Geerards, our brother ... in 1658 here at the Hague hath made his proof and trial of his art in the quality of Master Surgeon, and that we do acknowledge the same. Therefore giving him the power to open shop at all times and to practise surgery ... at the Hague, 25 July 1669."¹⁶ On the other hand Ralph Warwick was admitted on subscribing to the doctrines to practise 'artem chirurgie' but his licence is that for a physician.¹⁷

The licences issued by the diocese of Canterbury show a similar picture. In the years 1568 to 1640 (volumes 1-16) out of a total of 167 licences issued there were 57 for physicians, 103 (or possibly 104) for surgeons and 7 for physicians and

surgeons (or 6).¹⁸ Amongst those who signed the testimonials in 1605 were Nicholas Bennett, Theodore Beacon, Mr. Spencer and Robert Harvey, all of whom were termed 'artis chirurgie professor et phisice professor'. By 1608 Harvey had gained an M.D.¹⁹

The years immediately after the Restoration show a substantial increase in the dual practice, certainly the apothecaries that Samuel Pepys consulted were obviously practising medicine. In his diary on 5 January 1660 he wrote "Went myself with my lanthorn to Mr. Fage, to consult concerning my nose, who told me it was nothing but cold ... " On 10 February he made another visit " ... into London to Mr. Fage about the cancer in my mouth which begins to grow dangerous, who gave me something for it ... " In February three years later he went to see John Battersby about what is thought to have been an attack of nettlerash. The next day he stayed in bed " ... and by the apothecary's advice, Mr. Battersby, I am to sweat soundly ... "²⁰

Examples of mixed practice can be found in the mediaeval period. One of the earliest known is that of William Hobbys who practised as both physician and surgeon. In April 1462 he was described as 'the King's surgeon' in the household of Edward IV, by July 1470 he had been elevated to 'principal surgeon of the body', but in 1475 he was referred to as 'Physicus et chirurgicus pro Corpore Regis.' In the expedition to France of that year he received 18d a day instead of the usual 12d a day given to the other surgeons.²¹

Chief Justice Best erroneously said in 1828 that "The distinction between the various departments of the medical art had been drawn with great precision", and two years later

J.W. Willcock, "The law recognizes only three orders of the medical profession: physicians, surgeons and apothecaries" so that Holloway was constrained to follow suit by writing, "Between the physician, who could claim to belong to a learned profession, the surgeon, who practised a craft, and the apothecary, who followed a trade, the gap was wide and impassable," but in practice most of this was untrue, certainly in the first half of the nineteenth century and to a lesser degree in the previous 200 years.²²

The general practitioner has a long and respectable history. William Bulleyn's nineteenth rule that the apothecary was to remember that he was only the physician's cook has often been remarked upon but rules eleven and sixteen have caused less attention:-

11) [The apothecary is] to have two places in his shop;
one most cleane for the phisik, and a baser place for
the chirurgie stuff.

16) That he may open wel a vein for to helpe pleurisy.²³

The apothecary's rules were published in Bullen's

Bulwarke Of Defence in 1563 when he was already in practice in the ward of Cripplegate without, London, so he must have been well aware of the privileges of the Barber-Surgeons' Company set out in the act of 1540. Although not among the rules Bullen also exhorted the apothecary to keep his olyster pipe and bladders ready, which seems to suggest that the apothecary of the day had already partially forsaken his dispensing bench for the patient's home.²⁴

As has been already mentioned in Section I, the Barber-Surgeons' Company of London made numerous attempts to gain legal sanction

for what its members were undoubtedly already doing, namely, the administration of internal medicines for their surgical patients. They were never successful; this failure may partly account for the number of surgeons who put their sons as apprentices to apothecaries, whereby the two would be able to run a practice together which covered surgery, pharmacy and medicine.

William Nightingale, a surgeon of Crawley, Surrey, sent his son John in September 1723 to train under a London apothecary, William Turner; in the seventeenth century there are many examples, such as James Cooke, son of a Warwick surgeon being apprenticed to Marmaduke Thompson in 1666, and thirteen years later Enoch Benister, a son of Richard, surgeon of Canterbury, to Jonathan Leigh, both the apprentice masters being citizens and apothecaries of London.²⁵ Conversely, John Bott, apothecary and member of a far-flung medical family in the Midlands had his son bound to a barber-surgeon in 1712.²⁶

At an even earlier period the possibility of such a mixed practice arising can be seen. John Thomas, surgeon of Cambridge, died intestate. He had obtained a B.A. in 1512 and two years later the university licence to practise surgery. His house was three storied with eight rooms including his surgeon's shop and two cellars. He had chemical apparatus and a coffer with locks for his drugs, a few surgical instruments and an excellent library of 91 books which ranged from the classical authors, Virgil, Horace Cicero and Sallust, a New Testament in Latin, Greek and Hebrew grammars to 11 medical works. Letters of administration were taken out by John Pratt, apothecary, who had married his only daughter, and may even have been his apprentice.²⁷

The surgeons' oft re-iterated rejoinder that they had to give internal medicines without reference to a physician when at sea, was one that could be applied to practitioners resident in the lands being rapidly opened up to commercial development. The East India Company appears to have been well aware of the desirability of a man with all round qualifications.

Edward Bulk(e)ley, known as 'Dr. Bulkeley, chyrurgion' was appointed first surgeon to Fort St. George (Madras) on 29 December 1692. Bulkeley was informed that he had been placed in charge of the hospital, that he was to take care of the patients, "and look after all medicines and other things, that none be spoyled or wasted, or use for any other purpose. Keep an account of all material actions in a Book. Dr. Brown is to be continued a Chyrurgion here as before ... [but as there was] not roome for the continuance of Dr. Hart, he is to be discharged."

A communication from London informed Madras in April 1697 how this had come about. "When wee understood Mr. Heathfield was dead and that you had entertained Mr. Hart as a temporary surgeon in his stead, we resolved to supply you as soon as well as we could, and accordingly sent you, Mr. Buckley (sic) one who was every way very fitly qualified to serve us by his large experience of India as well as here, and as fit for prescribing Physick as manual operation; and we suffered him to carry out an apprentice that so he might not Complaine of want of help."²⁸

That he was interested in the production of pharmaceuticals can be seen from his letters to James Petiver. He wrote on 12 February 1703 "I also desire you will send me ye waye of refining Camphir and sugar. We have brown sugars here very cheap,

I want to refine them and make them into loafe. I want also
of
the best and the easiest method making Vinegar, we have often
pricked and damaged wines but knowe not howe to make good
vinegar of them, nor how to brighten that which is browne and
fowle."²⁹

The Inland Revenue apprenticeship records, which cover
almost the whole of the eighteenth century, can show examples of
'surgeons and apothecaries' taking apprentices early in the
century, men such as Robert Noble of Darlington in 1713 or
Thomas Knowler of Canterbury in the following year.³⁰ Indeed
an examination of these records forces one to the conclusion that
the two terms, 'surgeon' and 'apothecary' became to all intents
and purposes interchangeable. A view which is also held by
Joseph Kett.³¹ Henry Luximo(o)re of Okehampton was called a
'surgeon' in 1758 and 1766, an 'apothecary' in 1771, a 'surgeon
and apothecary' in 1784, and a 'surgeon etc.' five years later;
likewise George Le Grand(e) of Canterbury was termed a 'surgeon etc.'
in 1769, both a 'surgeon' and an 'apothecary' in 1776 and four
years afterwards a 'surgeon' once more.³² The situation is made
even plainer if the case of Henry Nunn of Manningtree is considered.
In 1759 he was apprenticed to James Nelson, surgeon of the same
town. By the time he started to take apprentices himself in 1773
he was termed a 'surgeon and apothecary' and again so in 1778, but
by 1782 when he took on Joseph Nunn he was once more a 'surgeon',
and then in 1787 a 'surgeon etc.'³³ He seems to have primarily
regarded himself as a surgeon. In September 1795 he made an
indenture of partnership with William Silk, apothecary in which
they were to be joint dealers in "the profession, art and business

of a Surgeon and Apothecary, in buying and selling all sorts of drugs and medicines necessary, and administering same, and in giving advice to patients." Silk was particularly enjoined to " ... take upon himself the active and laborious parts of the partnership and more particularly the apothecary's part."³⁴

If the tables appended (Appendix A) are examined it can be seen that as the eighteenth century progressed the title 'apothecary' became progressively less popular, whilst conversely that of 'surgeon' grew; even more striking is the increase of 'surgeons etc.' the scribes' usual shortened form of 'surgeons and apothecaries'. The change is as apparent in London as it is in the provinces.

There are three valuable sources of information about the practitioners of medicine and surgery in the seventeenth and early eighteenth centuries. The licences issued by the bishops as a result of the act of 1511, the subscriptions of the medical practitioner or surgeon to the Acts of Supremacy and Allegiance which are to be found in the Act Books of the bishop's vicar-general, and thirdly the archidiaconal triennial visitations which were made to check the licences of the vicars, rectors, schoolmasters, midwives, surgeons and physicians. The visitations of the diocese of London for the years 1697, 1700, 1706 and 1715 are in good order, and when considered in conjunction with the licences and subscriptions can be informative.³⁵

It is noticeable from these visitations that within the boundaries of the City and the neighbouring villages nearly all the licences examined were for surgeons. Ten miles or more away the situation was different; Staines in 1697 had two 'medici', St. Albans, one, and in 1706, Brentwood had one as well.

Just what the authorities meant by 'medicus' is not at all clear. Only two are specifically stated to have medical degrees, Benjamin Allen in Braintree, of Oxford, and Jonathan Bowes in Chelmsford, of Leydon. Ralph Grindale of Ware had a 'Lambeth degree' and Rodon of Harwich a Licence of London, otherwise no details are given. The accuracy of the scribes or perhaps their interpretation is doubted when the town of Maldon is considered. In 1706 it had one 'medicus' and six surgeons, and yet only nine years later the situation was completely reversed with five 'medici' and one surgeon. Admittedly the two sets of names are different as well.

It is reasonable to believe that many of those designated 'medicus' were in fact apothecaries. In at least one case this can be proved. John Clarke of Castle Hedingham 'medicus' at the visitation of 1715, was admitted to the practice 'artem medicinae' on subscription on 1st September and yet in the same year obtained his licence as an apothecary and practitioner in physic.³⁶

Likewise many of the surgeons were in fact apothecaries or else surgeon-apothecaries. On 31 January 1700 when John Harris of Lambeth Street, Whitechapel, surgeon and apothecary, applied for his licence to practise he brought with him a certificate which stated that he had been admitted as a foreign brother to the Company of Barber-Surgeons, 'as of Goodmans Fields' dated 16 June 1692, and he is almost certainly the John Harris of Wapping who was described as a surgeon in the visitation of 1715. He subscribed as a surgeon on the same day in 1700.³⁷

The visitation of 1693/4 was very incomplete and only two medical practitioners were noted, Robert Simmons and a Mr. Haselfoot,

surgeons of Harwich. In the visitation of 1706 a Robert Haselfoot was said to be a surgeon of that town, yet on the 29th August of the same year he received a licence to practise medicine and surgery. His licence states he was recommended by Charles Nichols, M.D., Henry Bull and Edward Woodward and that he "did serve Mr. Thomas Haselfoot of this town, surgeon, as his apprentice for seven years and hath practised in this place ... being surgeon to Her Majesty's Pacquet Boats here."³⁸

Or there was the case of Theophilus Aylmer (alias Ailmer and Aylmore). On 14 November 1677 he received his licence to practise physic and chirurgery in Chelmsford, and the same day subscribed as 'Art. med et chir.', but the archi-diaconal visitation of 1706 termed him a 'surgeon' and then 'medicus' in 1715.³⁹ There would seem to be considerable inexactitude in the use of the terms and possibly it worried neither party that Robert Mayhew of Witham was a 'medicus' in 1706 but had become a 'surgeon' in 1715.⁴⁰

The total absence of apothecaries in the subscription lists except for one cryptic note is noticeable.⁴¹ According to E.H. Carter, apothecaries were not required to make a subscription nor of course were they mentioned as such in the Act of 1511.⁴² Nevertheless their letters testimonial were acceptable. On 25 April 1692 Joseph Freeman of Little Waltham, surgeon, was certified to be competent by Benjamin Chamberlaine, licentiate in Chelmsford, apothecary, and William Swan, apothecary.⁴³

Distributed amongst the 590 parishes visited in the 1715 visitation there were 159 medical practitioners, of whom 3 were specifically stated to be in mixed practice. It is interesting

to note that the modern term 'doctor' is to be first seen in the visitation of 1700 at Clerkenwell and in the City. Many of the places visited were small and isolated, for example Black Notley or Northall (now Northaw) so that it is not remarkable that there is neither surgeon nor physician noted but their absence in some other places is rather more surprising. It is unlikely that small towns such as Codicot, Royston, Much Hadham, Sawbridgeworth, Felstead, Castle Coln or Brightlingsea were entirely without medical facilities. It is noticeable that Samuel Dale, the friend of John Ray and James Petiver, who practised as an apothecary at Braintree for thirty years is not mentioned in the visitation of 1715. Although thought to have been a Quaker he is known to have had a licence because he was one of the referees for John Clerke of Castle Hedingham, apothecary, and practitioner in physic in Brentwood on 10 October 1714 when he signed himself as, 'S.Dale, Licent.'⁴⁴

Clearly the whole diocese was not examined every three years but only a section. Some years were far more stringent and searching than others, notably that of 1697 when the practitioners were checked no less than four times and produced a fine crop of licences which were hastily taken out. By 1715 there was a distinct slackening of interest in medical licences. In 1697 there were 25 surgeons listed for St. Martins in the Fields and yet in 1715, although the parish was certainly visited, not one was noted; a situation which could be paralleled in other populous parishes such as St. James in the Fields and St. Paul's, Covent Garden. Similarly figures for the City parishes dropped from 100 in 1700 to 31 fifteen years later. This may well be

directly attributable to a letter sent by Charles Bernard,
clerk of the Barber-Surgeons' Company.

To Mr. Edward Alexander in Doctors' Commons

Sir,

All the members of our Company, as well all those who already had the Bishop of London's Licence as those who have only our Diploma, are summon'd to attend the Bishop of London's visitation on 18th inst. Now Sir T thought (as to those who have our Diploma, and who I am pretty sure you cannot oblige to take your Licence), it had been agreed between you and I that I would not endeavour to compell 'em, The Company is so alarmed at this extraordinary proceeding That if you persist in it, we must of necessity engage in a suit at Lawe whereby to settle this point. I am Sir

Yr. most obedient Servt.

Barbers' and Surgeons' Hall Charles Bernard.⁴⁵

Oct 8, 1715

Use of Titles

The Pharmacy Act of 1852 gave protection to the use of the titles 'pharmaceutical chemist' and 'chemist and druggist', and the following year a register was set up when the secretary of the Pharmaceutical Society of Great Britain was appointed to act as registrar.⁴⁶ The medical profession did not follow suit in the formation of a register until 1858 as a result of the Medical Act of that year. Thereafter the titles of 'physician' 'surgeon', 'apothecary', general practitioner' and above all the modern term of 'doctor of medicine' were protected. In the late seventeenth and eighteenth centuries apothecaries and surgeons

were often addressed as 'Doctor'. As mentioned earlier Edward Bulkeley was referred to as Dr. Bulkeley, and Sylvanus Bevan was known as Dr. Bevan.⁴⁷ Both James Petiver, apothecary in private practice and to the Charterhouse, and Richard Pulteney when an apothecary in Leicester were addressed in their correspondence as Dr. Petiver and Dr. Pulteney.⁴⁸

The medical practitioners appointed by the Overseers of the Poor were in the early eighteenth century usually apothecaries or surgeon-apothecaries but were frequently if not invariably, called 'Doctor'. In a list of 29 medical practitioners recorded in the Overseers of the Poor accounts for Eaton Socon (1706-1834) and Roxton (1684-1834) 19 are given the title 'doctor'. Of them 11 are specified by the author of the article on these accounts as being apothecaries, though it is apparent from an examination of extracts given, that in some cases the term 'surgeon and apothecary' would have been more accurate.⁴⁹ Little is known of any of these men but the first on the list, Dr. Trott of St Neots, has been traced from other sources. He was the son of Edward Trott of the county of Northampton, clerk, and was bound to Joseph Pawlett, citizen and apothecary of London on 3 June 1688.⁵⁰ Some time after he finished his eight year apprenticeship he set up in practice in St Neots, Huntingdonshire, where he in his turn trained James Rutterworth, John Lamphugh, Adam Hicks and Samuel Archdeacon.⁵¹ As an apprenticeship master he was termed both 'apothecary' and 'apothecary and surgeon'.

It should also be noted that the title 'doctor' was not always used even when it was completely justified. Early in 1555 Sir William Petre of Ingatestone Hall and Secretary of State,

in a life of poor health, became seriously ill. The accounts relate that 3s.4d. was given, "To Alsopp, the poticary for a purgation for My master devised by Mr. Wendy", and "To Wylde a surgeon, for 2 boxes of ointments devised by Mr. Clement, 2s."⁵² Both Clement and Wendy were Fellows of the College of Physicians.⁵³

Until the second half of the nineteenth century the use of titles has been entirely misleading as R.S. Roberts has written, "The point then is that it is necessary to get behind 'Official' titles in administrative records to see how these men really did practice - for not only are the appellations misleading but also they were interchangeable. For example Thomas Edwards [originally an apothecary] having with difficulty become a physician in 1607 called himself 'surgeon' when his daughter applied for a marriage licence in 1623; John Newton was styled physician when he died in 1646 but he had been licensed by the Bishop in 1628 to practise surgery. This confusion probably became more and more common and more complicated when, towards the end of the [seventeenth] century, the term 'doctor' began to be prefixed to the names of medical practitioners."⁵⁴ Clark, commenting on this Star Chamber case of 1604-7 examined by Roberts, wrote "But it shows, and in conjunction with other known facts, that at and after this time the appellations of physician, apothecary, and for that matter surgeon and doctor, were not used either by provincial practitioners or in popular speech, or even in some official records, so as to demarcate different kinds of practice."⁵⁵

The English Poor Law

The administration of the English Poor Law clearly must have

had considerable effect on the emergence and numbers of the general practitioners. It has been stated by E.M. Leonard that, "A fairly effectual system of relieving the destitute by public authority has had in England a continuous existence since the seventeenth century. Attempts to follow such a system of poor relief in the sixteenth century were common to most of the countries of western Europe, but the continuous existence of any organisation of the kind is peculiar to England."⁵⁶ Leonard believed that in large measure the survival of the English organisation was due to the policy of the Privy Council in the reign of Charles I, which effectively interfered to enforce the administration by the justices of the peace of the Poor Law enacted in 1597 and practically re-enacted in 1601.

The statutes of these two laws attempted to provide work for the unemployed, procure corn in years of bad harvests, regulate wages and provide succour for the 'impotent poor', which included the sick.⁵⁷

In 1631 the justices of the peace were still neglectful in the execution of the laws but the issuing in that year of the Book of Orders ordering special meetings to be held and the resulting reports to be sent direct to the Privy Council, would seem to have had a most desirable effect.⁵⁸ These meetings and reports continued until at least 1640 but probably were discontinued with the outbreak of the Civil War. In the following years the Poor Law was but laxly administered nevertheless it survived in part.

Numerous examples exist of methods employed to relieve the poor in times of sickness. Possibly the best documented are those which were undertaken during an out-break of plague. The plagues

of 1603, 1625 and 1665 were by no means isolated attacks.

New work carried out by demographers has shown that in the century prior to 1665 there were few years - if any - in which 'the pest' was not present in one town or another in England.⁵⁹

In spite of prevailing medical theory that illness was due to an imbalance of the humours, the obvious and characteristic signs and symptoms of bubonic plague made people aware that they were in the presence of a single disease entity and the value of isolation in the limitation of its spread was understood.

In 1593-94 Hemel Hempstead had a severe visitation.

There were 26 burials in August and September but by October the records ceased to be kept carefully, the reason being given on the last page of the parish register. "Richard, the son of Richard Howe, was buried 10 October 1594 which was left out of the book in the extremities of sickness when the parish clerk was shut up, it being suspected that his wife dyed of the plague." The justices of the peace had issued orders that any infected house should be " ... shut up and that you appoint a warder at the door to keep them from coming forth and others from coming at them, and that you, the churchwardens and overseers of the poor, be careful that the parties shut up be sufficiently provided for their present relief and sustenance."⁶⁰

Pest houses were also often established. Reading in 1639 spent more than £190 in building eight pest houses, whilst Norwich built one in 1630 and two more two years later.⁶¹

It would not seem that the authorities attempted to provide medical attention for plague patients, although provision was made for those who were struck down by less dramatic and fatal illnesses

or were victims of accidents. Leonard writing at the very end of the nineteenth century said, "In some places the help provided was even greater than that of today; a town physician was appointed especially to look after the poor."⁶² As early as 1592 a surgeon in Newcastle on Tyne received forty shillings, " ... as his accustomed fee for helping to cure the maimed poor folk," and "In 1599, a physician was paid his quarter's fee and in later years was known as the town physician." In 1632 a Mr. Henderson, "the townes physician" received on Lady Day £20 as his half yearly stipend, and even in the difficult days of 1647, "doctor Samuel Rand the townes physitian" received £10.⁶³ Barnstaple was equally provident. On 24 November 1629 a "Dr. Symes, a learned physician [was] engaged by the Mayor and Corporation to be resident in town and give advice gratis to the poor at £20 a year for two years to be paid out of the town stock if not raised by subscriptions."⁶⁴

This assistance to the sick poor was one of the sections of the Elizabethan Poor Law which survived into the Restoration, and vestry minutes or the accounts of the overseers of the poor afford many examples. Whittet and Newbold have shown that Peter Dent, William Frisby, Edmund Halfhyde, Artemas Hinds and Charles Gilman, all apothecaries of Cambridge were paid by the overseers of the poor in the parishes of St. Peter's, St. Edward's and Great St. Mary's, between the years 1685 and 1707.⁶⁵ Although Newcastle talked of its "townes physitian" and Barnstaple referred to a "learned physician" being employed, it is likely that most towns and villages followed the habit of Cambridge and installed apothecaries or surgeons as the medical practitioners of the poor. Living in Bakewell, Derbyshire at the end of the seventeenth century

was an apothecary William Bossley. The overseers of the poor's accounts show that on 4 March 1703 he was paid two shillings "For things given to Richard Eaton", the following year on 11 April £1.7s.6d shows "Paid to Mr. Bossley his pills for Joseph Fernally", and in 1705 five shillings "Upon Thomas Powner's account." Anne Punchaby was in receipt of two or three shillings every week in the summer of 1709 from the overseers who also paid "To Mr. Bossley for physic for Anne Punchaby. 10d."⁶⁶

Robert Murrell of Enfield, Middlesex, who was described in the archidiaconal visitation of 1697 as a surgeon, received far larger sums. Amongst many entries to the same effect the vestry minutes record the following:-

14 September 1684

"To Mr. Robt. Murrall in full £4 for curing the wife of John Mountegue, Husbandman, living in Green Street whose leg was dangerously broken."

2 May 1686

"Ordered that Mr. John Hill do pay Mr. Robert Murrell £4 for chirurgeoning of Cuffley's wife."

4 December 1687

"That Mr. John Hill do pay Mr. Murrell £3 for setting and curing Tho. Adams his arm." Adams' bones would seem to be fragile because only a few months later there is the note, "That whereas Thomas Adams hath lately broken his leg by a casualty, that he not being able to sustain the chyrurgeon should go forward in pursuance of the cure and the parish is consented to pay for the same."

7 December 1690

"That Mr. Robert Murrell be paid £4 for curing Edward Starling

of a broken leg which money is ordered to be taken out of the storehouse."⁶⁷

The Enfield Parochial Charity minutes show that Robert Murrell was also in receipt of money from the local charities. In 1697 he was paid £3.11s.0d, £3.15s.0d, and £4.13.0d for "cures done to several poor people."

5 August 1709

"Paid Mr. Murrell for the cure of a man's head and arm wounded by the Mill, for the cure of Grace Saxbey's leg, for the cure of Wid. Ingles' arm and for the cure of John Smedley's leg. £15." Two years later he was paid £11.9s.0d and a pencil note added "More due to him £26.11s.0d."⁶⁸

Murrell's work seems to have been mainly if not entirely concerned with surgery. He probably trained his son, William, in the same art with the idea of him succeeding to the practice as in the visitation of 1715 it is William Murrell and not Robert who is named surgeon for Enfield. Another son, Richard, he sent to be taught by Daniel Harper, surgeon of Whitechapel.⁶⁹ In his will, made on 24 October 1728, he terms himself a surgeon, but he had other sources of income. He held a considerable amount of agricultural land, was landlord of 'The Greyhound' and owned a brewhouse, besides two other tenements.⁷⁰

Others whom the Enfield vestry and charities paid for 'cures' were Thomas Marshall, Robert Smithson, the Widow Mountegue, a Mr. Huddleston, Thomas Jones and Thomas Wilford between the years 1682 and 1718. Huddleston was undoubtedly the John Huddleston, son of Peter of Enfield, fellmonger, who was apprenticed to Henry Cliff, Barber surgeon for seven years

in 1665.⁷¹ Thomas Jones was another surgeon, although on the occasion of the apprentice bindings of his two sons John and Thomas to two London barber-surgeons, Richard Frisby and John Kirkham, he is entitled 'gentleman'.⁷²

Thomas Wilford, a member of an influential, well-to-do and educated local family, on the other hand was trained as an apothecary. On 4 May 1669 Edward Wilford, gentleman of Enfield, signed indenture papers with William Phillips, citizen and apothecary of London for an eight year apprenticeship for his son.⁷³ From the charity minutes it is certain that Wilford was practising as both apothecary and surgeon although in the disposal of his considerable property in London and Enfield in his will of 1719 he termed himself apothecary.⁷⁴

27 March 1704

"Paid Mr. Thomas Wilford in full for cures to Edward Bradley's wife and Goodfellow's children. £4.1s.6d."

22 January 1713-4

"To Mr. Tho. Wilford in part for cureing goody Robert's leg £1.3s.0d."

16 April 1714

"To Mr. Tho. Wilford in full for cureing goody Robert's leg 17s."

2 November 1705

"Paid Mr. Thomas Wilford for physick given to several poor. £2.6s.0d."

22 February 1718

"Mr. Pemberton paid to Dr. Wilford his Bills. £1.18.0d."

There is also extant one of Thomas Wilford's bills.

"1709. For performing a cure on Goody Robert's leg, which had been very bad for above a year by Poulcesses, Fomentations, Oyntments, Plasters and several bottles of dyett drink for all which we deserve

no less than Forty shillings. Thomas Wilford."⁷⁵

At this period the medical bills were paid as and when they occurred but usually by about the second quarter of the eighteenth century medical contracts were made, possibly as a result of the high bills which had been incurred. A vestry resolution 19 January 1730 states that the parish of Eaton Socon, Bedfordshire had agreed to pay £5, " ... from this time ... to Easter 1721 [to] Mr. John Sharpe, an apothecary [who] shall find all manner of surgery and physick for all the poor of our said parish ..."⁷⁶ Dr. Sharp's bills for 1729 had amounted to at least £28 so the parish were being distinctly hopeful, not to say parsimonious, to contain the costs of medical attention to this low sum of money. Indeed it was obviously impossible, as when that contract ran out, the next one was made with a 'Mr. Willis Atkins' for six guineas a year. "Dr. Adkins' had been frequently called in by the overseers from 1718 onwards."⁷⁷

Not only did these medical practitioners practise as apothecaries and surgeons they also acted as man-midwives. In the years 1706-19 at Eaton Socon there were nineteen disbursements for lying-in. Usually only the midwife was paid her half a crown fee but sometimes the doctor was also present, as for example, "To Dr Williams for doeing his office in laying Musgrave's wife. £3.4s.6d." Joseph Wilson, apothecary and surgeon, received a salary of £21 a year from the Enfield parish charities but was given extra sums of money for cases of childbirth.

23 July 1746

"To Mr Joseph Wilson for his salary as Surgeon and Apothecary to the Parish £21"

3 October 1744

"To Joseph Wilson for his salary and attending a woman in labour.
£22.1s.0d."

14 November 1745

"To Dr. Jos. Wilson for his salary and for laying a woman.
£23.2s.0d."⁷⁹

There would seem to be no doubt that the implementation of the Poor Laws was instrumental in the emergence of the general practitioner. The apothecary, skilled in physic and pharmacy, allied himself with the skills of the surgeon, and practised, as occasion demanded, the neglected and despised science of midwifery. The Hammonds of Edmonton and the Ridges of Sussex and Enfield.

It is instructive to trace the history of a medical dynasty. The changes of title and the changes in education of each generation reveal the way in which the general practitioner of today has developed out of the surgeon or apothecary of the early eighteenth century.

Robert Killingly, son of a wine porter in the parish of St. Giles-without-Cripplegate, was bound apprentice in 1722 to William Beckington, citizen and apothecary of London for eight years.⁸⁰ He did not take up the freedom of the Society so it seems that he had no intention of practising within a seven mile radius of the City. When he came to Edmonton is not known but his son, another Robert, was baptised there at All Saints on 26 March 1732.⁸¹

Just at this time the workhouse was being built in Church Street.⁸² On 24 April 1732 it was decided at the workhouse committee, " ... to pay unto Dr. Swift twelve pounds for one year from this Day to be our Physician and Apothecary to the poor of this parish

within the workhouse and without ..."⁸³ Presumably Mr. Swift did not practise midwifery as a Mr. Willson (also designated Dr.) was paid £2 eighteen months later for a woman 'that was laid'. During this period Robert Killingly also presented a bill to the committee but unfortunately it "was put to the vote and it was voted not to be paid."⁸⁴ In spite of this unfortunate start, nine years later, the vestry voted that "Mr Killingly be the Parish Apothecary for the annual sallary of 12 pounds per annum ... and that no person to receive any medicine without any order from the Justice of the Peace, Churchwarden or Overseer."⁸⁵ He continued in this post for at least six years and probably until his death in 1755. Almost exactly two years later his 22 year old daughter, Frances, married John Hammond.⁸⁶

The origins of John Hammond are unknown though family tradition says that he hailed from Norfolk.⁸⁷ He may have been Killingly's apprentice, but in any case he succeeded to the Edmonton practice. He was successful and when he died in 1790 he left a sizeable estate. He made his will in November 1788, in which he described himself as a 'surgeon and apothecary', he set up a trust which his friend Sir James Winter Lake was to administer for his wife, and twelve hundred pounds was distributed between his three sons, William, Thomas and John. He earnestly desired that the three of them were " ... to continue together and to aid and assist each other to the utmost of their respective powers in carrying on their business of Surgeons and Apothecarys."⁸⁸ The first two were trained by their father and then went to Guy's Hospital as dressers to William Lucas in 1781 and 1786 respectively. The details for John are missing but it is known

that he too attended Guy's (or possibly St. Thomas's) in 1791.⁸⁹ After John Hammond the elder's death the vestry passed the following motion, " ... respecting a vacancy of an apothecary in room of the late Mr. John Hammond deceased, it was unanimously resolved that Mr. William Hammond and Mr. Thomas Hammond be continued as surgeons and apothecaries of the Parish on the same terms and conditions as Mr. John Hammond, their late father, viz., £50 a year but to find every kind of Medicine and to be subject to be discharged on non-attendance in their duty to the poor."⁹⁰

All three sons passed the diploma examination of the London Company of Surgeons,⁹¹ but in spite of their father's wish they soon went their separate ways. William was probably already at Southgate at the time of the older Hammond's death as his own son John was baptised there in 1789.⁹² The youngest of the three brothers married the daughter of William Complin, an apothecary of Enfield and subsequently of Goodmansfields, and it was probably this which induced John to move the two miles further north.⁹³ Only Thomas remained in Edmonton for the rest of his life and there gain indirect fame as the apprentice master of John Keats.

John Hammond junior, the father of two daughters and a son, moved sometime after 1803 but before 1808 to Brighton and then to Bideford. His son, Freelove, became a barrister of the Inner Temple and spent most of his life in Bristol. William's only surviving son on the other hand followed the family pattern. He 'served his time' with his father at Southgate and then in 1810 went to Guy's to become Astley Cooper's dresser.⁹⁴ After his father's death he was to receive one sixth part of the residuary

estate (young William had five sisters) provided he carried on " ... his business as a Surgeon and Apothecary and adheres to the articles of Co-partnership between them", which meant he had to pay £400 a year to the widow. She had been bequeathed " ... all the freehold messuage or tenement, shop, coach-house, stables and land in Southgate in my occupation" for life, "she paying all taxes and to keep it in repair and upon trust for son William, who is to occupy and enjoy my said shop, coach-house and stables on paying £40 a year ..."⁹⁵ William was to purchase all the drugs in the shop at a fair price fixed by an 'indifferent' person.

The main interest in the family now centres on Thomas Hammond. he and his wife Susannah were the parents of three sons and three daughters. The eldest son, Thomas John, had almost thirty years continuous military service with The East India Company; marrying late a wife of 33, he nevertheless became the father of seven sons. The second and youngest became doctors practising in Indiana and at Liskeard.⁹⁶ Thomas Hammond's other two sons, Henry Samuel and Edward Bowles, both chose the same career as their father.

The younger of the two, and contemporary of Keats, Edward, was possibly trained by his father and had some difficulty in passing the diploma of the College of Surgeons.⁹⁷ His life was as short and tragic as his fellow apprentice's for he was only 32 when he died, anyear or so after the deaths of his wife and two of their three children. Henry Samuel, on the other hand, was apprenticed when he was eighteen to the well known surgeon Thomas Blizzard at a fee of two hundred guineas.⁹⁸ Unlike his brother, Henry had no academic problems, becoming an M.R.C.S.

in 1814 and F.R.C.S. in 1858.⁹⁹

Henry Hammond practised all his life in Edmonton although like so many other middle-class people he was to retire to the south coast in the 1860's. Like his father, grandfather and great grandfather he became the equivalent of Robert Killingly's parish apothecary. In 1842, exactly a hundred years after Robert's appointment, Henry became medical officer to the Edmonton Poor Law Union in the Church and Bury Street medical district. He held the situation for at least twelve years. He received £110 a year until the Union workhouse was opened when it became £150. From 1858 to 1860 he was a member of the Edmonton Local Board of Health. He was a conscientious doctor and like his grandfather was 'a friend to the poor.'¹⁰⁰

Henry Samuel had a large family but only one son, Samuel, the youngest decided to adopt medicine for his profession. He took the double qualification of M.R.C.S. and L.S.A. in 1858 and was the first of the family to become a licentiate of the Royal College of Physicians (Edinburgh) by examination in 1860. He seems to have been of a wandering turn of mind. In 1861 he was in Edmonton but the next year was the medical officer of the Aldborough district of the Erpingham Union, Norfolk, the following year medical officer of Tower Hamlets and the Eastern Dispensary, and house surgeon of the London Hospital. Two years later he was public vaccinator and medical officer of the Midhurst and Hambledon Unions.¹⁰¹ Between 1873 and 1882 he was in Timaru, New Zealand and then settled in Australia.¹⁰²

This in five generations of the same family the change had been effected from apothecary to surgeon-apothecary, to

general practitioner and finally physician.

It is of even greater interest to follow the history of the Ridge Family. In 1713 Richard Russell, surgeon, was practising in Lewes, Sussex when he took as apprentice for seven years John Snashall son of John, a malster in Lewes.¹⁰³ Twelve years later Snashall became an apprentice master himself; first, there was Samual Snashall (1725), then Francis Mitton (1740) and in 1748 Joseph Ridge I, son of Benjamin of Iford.¹⁰⁴ On the indentures he called himself both surgeon and apothecary. Ridge in his turn, calling himself a surgeon, was apprentice master to Joseph Rickman in 1763, but not to his own nephew, Thomas, who was apprenticed to John Chambers, apothecary in Lewes in 1775.¹⁰⁵ These families of the Snashalls, Ridges, Mittons and Chambers formed a complicated network of intermarriage.¹⁰⁶ It is probable that Joseph Ridge succeeded to the practice of John Snashall, and that John Chambers later became a partner with him at 80, High Street, Lewes.

As far as is known Thomas Ridge was the first member of the family to move further afield in order to gain greater experience. He was at Guy's Hospital by 1781 and had moved on to Great Yarmouth ten years later where he practised as a surgeon until his death in 1822.¹⁰⁷

The son of Thomas's second cousin William, brewer and mayor of Chichester, Benjamin Ridge II was apprenticed to James Cockburne, 'surgeon etc.,' of the same city for six years in the October of 1795.¹⁰⁸ Benjamin II was to be the progenitor of six generations of doctors. Like Thomas before him, he does not seem to have worked the full length of his apprenticeship because he too was

at Guy's by 1798. Two years later he joined the East India Company as a ship's surgeon finally settling at Lambeth in 1802. He trained his son, John James I, there and sent him to Guy's as family tradition demanded in 1831. John James, or J.J.I as he came to be known, was a man of parts. He settled in general practice in Gravesend in 1844 and was later to become mayor of that town. He obtained an M.D. of St. Andrews in 1852. He was fond of exercising his talents as an inventor and took out a number of patents, undoubtedly the most successful was his formulation of 'Dr. Ridge's patent food', which had a great vogue until the second Great War. A patent was applied for on 27 October 1862 by John James Ridge, M.D. of Thomas Street, Southwark.¹⁰⁹ He was at that time living at 10, Freehold Street, Horsledown, S.E., and in the Post Office Directory is recorded as being a surgeon and chemist.¹¹⁰ In the Post Office Trades Directory he is also listed as being a chemist and druggist, a description that was far from inaccurate as he was a director of the General Apothecaries' Company.¹¹¹

This company existed from 1856-1959 when it went into voluntary liquidation. It is believed that the company may have originated in Birmingham but was soon transferred to 49, Berners St. London, W.1. where a pharmacy stood until the second Great War, and the wholesale until 1959 in Bishopsgate. An undated broadsheet informed the public that, "Some gentlemen are about to establish a General Apothecaries' Company for the purpose of supplying the Public and the Medical Profession with unadulterated Drugs and Chemicals, Invalid Foods, Condiments, Sanatory (sic) and Domestic Articles; to prepare Physicians' and other Prescriptions,

Photographic Chemicals etc., etc. The Company is provisionally registered under the Act 7 & 8 Vic. c.110, and the new Limited Liability Act." It drew attention to the "... almost universal adulteration of Medicines, Chemicals and Condiments" and that "The profits made by preparing and selling Drugs and Chemicals are enormous, many articles in daily use in families being sold for ten and even twenty times their prime cost." The broadsheet was signed by Dr. Ridge, Gravesend, John Gardner, M.D., Maritime St, Cavendish Sq., and E Moss, solicitor.

In a circular issued in 1856 it was claimed that the directors had at Berners Street "made arrangements for obtaining the best and purest Drugs and Chemicals. They have fitted up extensive and complete Laboratories and Drug Mills for grinding Powders and preparing the vegetable alkaloids, extracts and every form of remedial agent. They have engaged the service of Scientific Chemists to subject to the strictest testing and analysis every substance they sell and for preparing with scientific accuracy all compounds. They have opened an extensive establishment for supplying the public with medicines in all forms, preparing Physicians and other scripts, fitting up medicine chests and selling all the varieties of invalid food." The document was signed by Dr. Ridge, chairman.¹¹² It is all rather reminiscent of the College of Physicians' dispensaries 150 years earlier.

Dr. Ridge continued to be entered as a chemist and druggist until 1868 when it ceased, presumably because of the Pharmacy Act of that year which gave greater protection to the title 'chemist and druggist'. No further mention of the food is found until

it is listed in the commercial directory of 1871 under Ridge's Patent Food Co. Ltd., (Peter James Rumney, secretary), Gun Alley, Bermondsey St. S.E.¹¹³ This entry lasted until 1873, then in 1875 in an advertisement in the trades directory it is found that the food was being produced at the Royal Food Mills, Bradbury Street, Kingsland Green, N.¹¹⁴

John James' brother, Benjamin III (1807-1889) had a rather different career. After Guy's (1833) he gained an M.D. of Jena (1839) and became an F.R.C.S. in 1854. He was the author of many medical papers. J.J.I's son John James II forsook Guy's for St. Thomas's where he was a gold medallist. He was something of a collector of degrees as he had an M.B. B.S., a B.A., a B.Sc., and an M.D. of London (1869), in spite of which the 1880 directory for the county suburbs, north, simply describes him as B.A., surgeon. He too was of an inventive turn of mind and he applied for patents for games, fountain pens and stands.¹¹⁵ He came to Enfield, Middlesex in 1872 where he became their first Medical Officer of Health.¹¹⁶ He was also the moving spirit in the instigation of Enfield's Cottage Hospital, which was opened amidst a torrential downpour on 14 July 1875.¹¹⁷ He was an ardent supporter of the Temperance Movement and the Boys' Brigade, and gave scientific lectures to local societies such as the British Workman.¹¹⁸ Any new invention commanded his sympathetic interest. His house was wired for an electric bell as early as 1875, he rode a tricycle and when safety bicycles were introduced he was one of the first to have one, and the same applied to the motor car. He was not afraid to advertise his father's patent food and many advertisements carried 'unsolicited' testimonials such as

those from G. Howard Jones, M.D. of Cambridge St., Boston,
and Samuel Barker M.D. of the Brighton Hospital for children.¹¹⁹

The next three generations of the family may be summarised
as follows:-

Sons of John James II:-

Edwyn. M. (1877-1914) London Hospital. L.R.C.P. 1900,
F.R.C.S. 1902. Special interest in ophthamology. Killed
Antwerp 1914.

Robert Leslie (1880-1958) London Hospital M.B. B.S. 1905.

G.P. in Enfield from 1908 onwards.

Sons of Robert Leslie:-

Benjamin IV (1917-) London Hospital M.B. B.S. 1941

O.B.E. 1972. G.P. in Enfield.

Eric Leslie Edwyn (1919-) St. Bartholomew's M.R.C.S.,

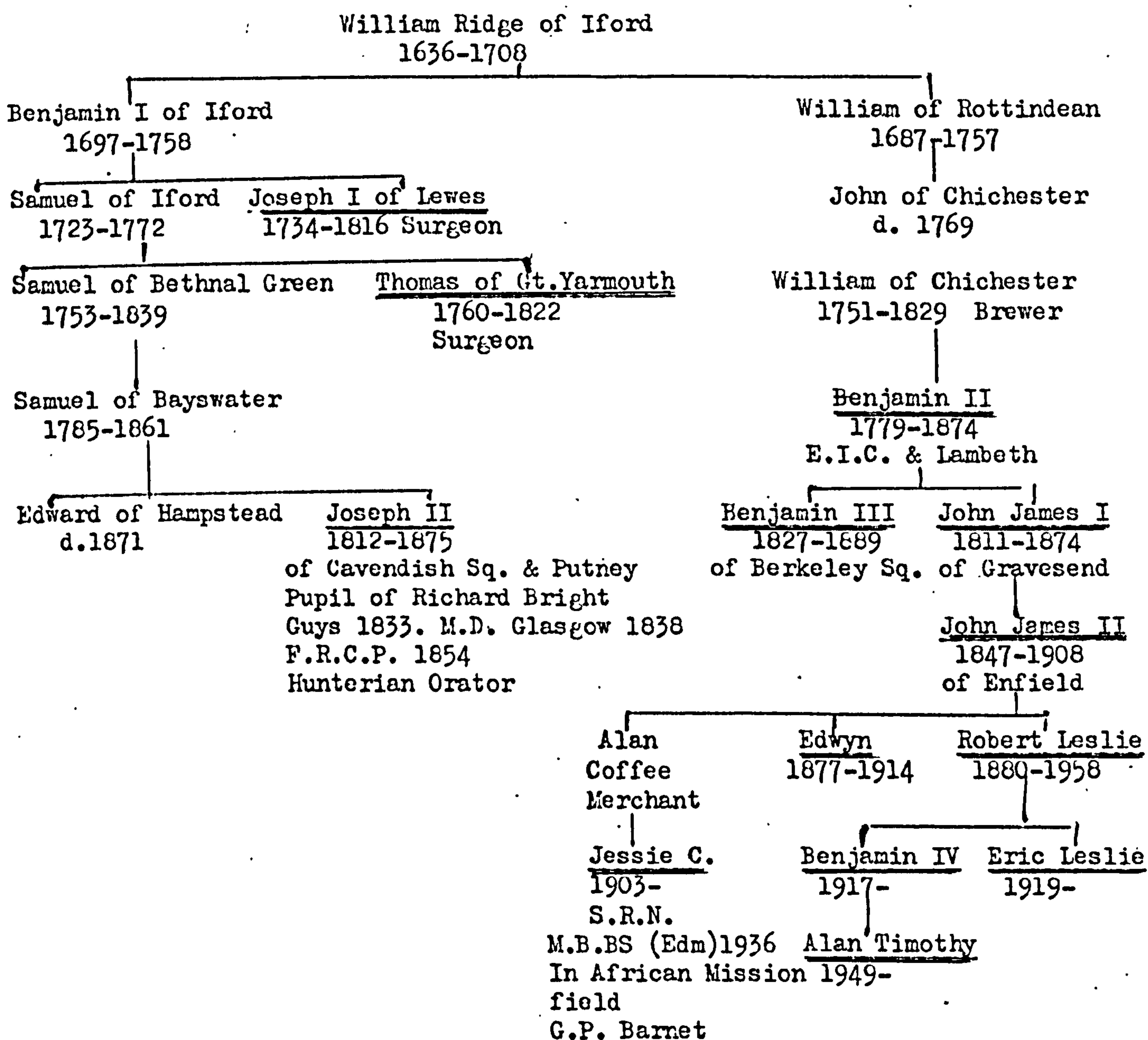
L.R.C.P. G.P. in Enfield.

Son of Benjamin IV:-

Alan Timothy (1949-) London Hospital M.B.B.S. 1974

G.P. in Enfield.

THE RIDGE FAMILY TREE



Those which are underlined were medical practitioners.

There would seem to be little doubt that the apothecary was an essential factor in the genesis of the general practitioner, but is equally obvious that the title 'apothecary' was not an exact one. Throughout the eighteenth century the terms 'surgeon' and 'apothecary' could scarcely be differentiated in the provinces, a habit which was already well developed in the previous century. John Trott and Thomas Wilford were both apprenticed to London apothecaries,

neither as far as is known had further training with a surgeon, and yet both worked as the mixed practitioner of the day in Eaton Socon and Enfield. Possibly they were self-taught or possibly the London apothecary practised far more surgery than is generally supposed.

Notes and References.

1. Z. Cope, 'The origin of the general practitioner', History of medicine, London, History of Medicine Ltd., 1973, 5:1:3-9.
2. C. Wall. H.C. Cameron & E.A. Underwood, A history of the Worshipful Society of Apothecaries of London, Oxford, University Press, 1963, 1:202-3, quoting from the Medical and physical journal, 1813, XXIX, p.3-4.
3. W.J. Bishop, 'The evolution of the general practitioner in England', The Practitioner, 1952, 168:171-9.
4. S.W.F. Holloway, 'Medical education in England, 1830-1858', History, 1964, XLIX:311.
5. "Midwifery was not regarded as a part of medical practice and no restriction was imposed upon any who might think proper to undertake it." See Cameron, op.cit., p.189.
6. G. Clark, A history of the Royal College of Physicians of London, Oxford, Clarendon Press, 1964, p.610.
7. The Linnean Society. The Pulteney letters. John Aiken, senior, to Richard Pulteney, 19 May 1761.
8. Cameron, op.cit., p.188.
9. Clark, op.cit., p.491. On 5 March 1725 a man called Horseman and presumably the same person was termed an apothecary. He may have been the Nathaniel Horsman, surgeon of Poplar, of the archidiaconal visitations of 1715, (Guildhall Library, Ms. 9537/26), or the Samuel Horsman

who became M.D. (Leyden) on 30 October 1721 at the age of 23 but did not incorporate at Cambridge until 1728. See R.W. Inner-Smith, English-speaking students of medicine at the university of Leyden, Edinburgh, Oliver and Boyd, 1932, p.121.

10. Clark, op.cit., p.290.
11. J.H. Bloom & R.R. James, Medical practitioners in the diocese of London, licensed under the act of 3 Henry VIII c.2.; an annotated list, 1529-1725., Cambridge, University Press, 1935, pp.55,46,54.
12. Guildhall Library, Ms. 9540/4, unpag.
13. Enfield parochial charities accounts, in the custody of D.H. Holliday, 10, Russell Road, Enfield; Bloom & James, op.cit., p.35. Joseph Wilson in the list of window tax defaulters 1749-51 was described as 'apothecary of Enfield Town'. In the first two quarters of 1749 he owed £1.14s.0d on 66 windows.
14. Guildhall Library. Ms. 9539A/1, ff. 14r.,15v.,16r., John Clarke and John White, both of Billericay, and Gilbert Wakering of Halstead were all admitted to practise 'physicke & Chirurgerie'.; Ms. 9540/1.
15. Guildhall Lib. Mss. 9,539A/1, 9,539/C, 9,540/1, 9,540/4.
Between the years 1627 and 1719 there were 164 subscriptions of medical practitioners, and 294 licences issued between 1600 and 1725.

It is of interest to break down these numbers into classes of medical practice and make a comparison between the two lists:-

	Ms.9,539A/1 1627-1644	Ms.9,540/1 1663-1683	Ms.9,540/4, 1684-1719	Total	Bloom & James 1600-1725
Art, Med & Chir.	3	15	0	18	16
Art. Chir.	4	28	84	116	186
Art. Med. ('physician')	3	12	12	27	66*
Apoth. & pract. of physic.	-	-	-	0	1
Apoth. & Chir.	-	-	-	0	3
Medically unqualified	1	2	-	3	(9) - included in the 66* above
Unclassified	-	-	-	0	22 [@]

* Of the 66 licensed for the practice of medicine, 4 had M.D.'s and 1 an M.B. and 9 were men of education but medically unqualified.

@ Of those which are unclassified, 1 was a chemist, 8 were probably surgeons, 6 are described as 'practitioners of physic' and 3 'practitioners of physic and chirurgery'; the practice of 4 is quite unknown.

In the subscription lists there is a complete break between December 1702 and July 1706; the taking of subscriptions was continued in an increasingly desultory fashion up to 1785 but there were no medical ones after 1719 except for that of John Pond, surgeon, in 1723.

16. Ms. 9,540/1, f.54r.; Bloom & James, op.cit., p.50.

17. Ms. 9,540/1, f.62r.; Bloom & James, op.cit., p.72.

18. A.J.Willis (editor), Canterbury licences (general) 1568-1646,
Chichester, Phillimore, 1972, pp.22-29.
19. Ibid., p.25.
20. T.D. Whittet, 'Samuel Pepys and his apothecaries',
M & B pharmaceutical bulletin, Dagenham,
May & Baker Ltd., 1967, 16:40-43, see pp.40,41.
Mr. Fage is thought to have been Valentine Fige,
a member of the Court of Assistants of the
Society of Apothecaries.
21. A.R.Myers, The household of Edward IV, Manchester, University Press,
1959 2nd edition, pp.124 and n.189, 29
& n.191.
22. Holloway, op.cit., p.306.
23. C.Townsend, 'Apothecaries, druggists and pharmacists, past, present
and future'. Pharm. Journ., 1870, 11:615.
24. L.G.Matthews, 'William Bullen and his Bulwarke', Pharm. Journ., 1961,
186:69-73, see pp.70-2.
25. Public Record Office. Inland Revenue apprenticeship records,
I.E./1/9, f.120.; Guildhall Library.
Apothecaries' Society court minutes.
Ms. 8200/2, ff.110,252.
26. I.R./1/1, f.105.
27. W.M.Palmer, 'Cambridgeshire doctors in olden times', Proc. Camb.
Antiq. Soc. 1911, 15:229.
28. D.G.Crawford, History of the Indian medical service, 1600-1913,
London, W. Thacker, 1914, p.88, quoting
from Vestiges of old Madras, 1:563, II:68.

29. British Library. Sloane manuscripts, Ms. 3321, f.110.
30. I.R./1/43, ff.69,139.
31. J.F.Kett, 'Provincial medical practice in England, 1730-1815',
Journ. Med. Hist., 1964, 19:17. He wrote,
 "After 1730 the words 'surgeon' and 'apothecary'
 were used interchangeably in the provinces ...
 Samuel Buxton was described as a 'worthy and
 sensible apothecary near the Wells' in 1769
 and as 'Mr Buxton, surgeon' ten years later."
32. I.R./1/21, f.158; I.R./1/24, f.204; I.R./1/32, f.122;
 I.R./1/34, f.102; I.R./1/26, f.47;
 I.R./1/28, f.216; I.R./1/30, f.157.
33. I.R./1/21, f.222; I.R./1/27, f.189; I.R./1/60, f.118;
 I.R./1/31, f.117; I.R./1/64, f.220.
34. Essex Record Office. Ms.3505 (D/DHW f.141 B.10)
35. Guildhall Library. Ms. 9537/24, Ms. 9537/26.
36. Bloom & James, op.cit., p.43.; Guildhall Library. Subscription book,
 Ms. 9540/4, on 1 September 1715 he was admitted
 to 'artem medicinae'.
37. Bloom & James, op.cit., p.54.; Ms. 9537/26, unpag.; Ms. 9540/4, unpag.
38. Bloom & James, op.cit., p.54.; Ms. 9537/26, unpag.
39. Bloom & James, op.cit., p.37.; Ms. 9540/1, f.61r.; Ms. 9537/24,
 f.141v.; Ms. 9537/26, unpag.
40. Ms. 9537/24, f.140v.; Ms. 9537/26 unpag.
41. Ms. 9537/24, f.144v. John Cook, 'medicus' of Leigh, "That he is an
 apothecary and served his apprenticeship and
 practised as such and not otherwise."

This was written in 1706 but in 1715 he was still described as 'medicus' with no further comments.

42. E.H. Carter, The Norwich subscription books, London, Thomas Nelson, 1737, p.134.
43. Bloom & James, op.cit., p.49. In the visitation of 1715 a Benjamin Chamberlain of Great Dunmow, probably the same man, was termed 'medicus'.
44. Ibid., p.43.
45. Bloom & James, op.cit., p.30.
46. L.G. Matthews, History of pharmacy, Edinburgh, E. & S. Livingstone, 1962, p.132.
47. D. Chapman-Huston & E.C. Cripps, Through a city archway, London, J. Murray, 1954, p.19.
48. Sloane Manuscripts; Letter in the possession of D.F.Lewis, secretary and registrar of the Pharmaceutical Society.
49. F.G. Emmison, 'The relief of the poor at Eaton Socon, 1706-1834', Beds. Hist. Record Soc., 1933, 15:1-99, see pp.78-9.
50. Apothecaries' Society court minutes, Ms. 8200/2, f.260.
51. Inland Revenue apprenticeship records. I.R./1/1, f.^z135, July 1712; I.R./1/8, f.23, June 1717; I.R./1/11, f.^z85, July 1726; I.R./1/13, f.196, June 1733.

In some cases the Inland Revenue apprenticeship records will bear an asterisk by the folio number. Owing to production difficulties at the Public Record Office (Kew) it has

proved impossible to check some of the folio numbers, consequently only an estimated figure can be given in those cases. As an additional aid to their use and identification the date (i.e. the month and year) when the entry was made in London has been given.

52. F.G. Emmison, Tudor food and pastimes, London, Benn, 1964, p.98.
53. W. Munk, The roll of the Royal College of Physicians of London, London, Royal College of Physicians, 1878, pp.26,50.
54. R.S. Roberts, 'Personnel and practice of medicine in Tudor and Stuart England', Med. Hist., 1962, 6:363-76, see p.376.
55. Clark, op.cit., p.608.
56. E.M. Leonard, The early history of English poor relief, Cambridge, University Press, 1900, preface, p.vii.
57. Ibid., p.ix.
58. Ibid., p.x.
59. C.Morris, "Plague in Britain", in (editorial board), The plague reconsidered, Matlock, Local Population Studies Supplement No.4. 1977, pp.37-47.;
Personal communication from D.Avery, member of the editorial board.
60. S. Yaxley, "The sixteenth century", in S.Yaxley (editor), History of Hemel Hempstead, Borough of Hemel Hempstead, 1973, pp.37-55, see p.49.
61. Leonard, op.cit., p.200, quoting Records of Reading, 3:454 and Norwich court books 12 May 1630 and 14 May 1632.

62. Ibid., p.201.

63. Ibid., p.202, quoting Welford's Newcastle and Gateshead, 3:132

and M.A. Richardson, Tracts, 3:47.

John Brand gives a slightly different version and also extends the list. He writes that Samuel Rand M.D. was appointed on the death of Doctor Robert Henryson but was displaced for negligence 21 April 1643 and was re-admitted 5 July 1652. He died in 1654 and the town was without a physician until the appointment of Doctor George Tunstall on 27 August 1660.

He was removed and Richard Luck M.D. was installed on 4 November 1664. The next town physician Henry Atherton, also credited with an M.D., was appointed 17 August 1682; he in turn was succeeded by Doctor Robert Grey.

On 31 March 1701 a motion was passed in common council that either Doctor Thomas Davison or Doctor Richard Huntley should be the next physician but in the event the corporation never appointed another. See J. Brand, The history and antiquities of the town and county of the town of Newcastle upon Tyne, London, 1789, 2:362-3.

64. Ibid., p.202, quoting 'Wyot's diary', Barnstaple records,

North Devon Herald, 21 April 1881.

65. T.D.Whittet & M.Newbold, 'Apothecaries in the diary of Samuel Newton, alderman of Cambridge', Pharm. Journ., 1978,

221:115-18.

66. Overseers of the poor accounts, Bakewell.
67. Local history department of London borough of Enfield, Palmer's
Green Library. Enfield vestry minutes.
68. Enfield parochial charities' accounts, op.cit.,
69. Inland Revenue apprenticeship records, I.R./1/14, f.[£]95, April 1736.
70. Public Record Office. Duchy of Lancaster records, Surveu of
the manor of Enfield, 1686, Ms. D.L.43/7/9.;
Guildhall Library. Commissary court wills,
Ms. 9168/36, 6 March 1733.
71. Guildhall Library. Barber-Surgeons' Company bindings,
Ms. 5266, 1: F.109r. His brother Robert,
was a schoolmaster in Enfield who in his will of
April 1713 referred to him as " ... my brother
John, citizen and chirurgeon of London, now
living at Enfield". See Commissary court
wills, Ms. 9171/59, 25 Sept. 1715.
72. I.R./1/2, f.77, June 1713.; I.R./1/2, f.175, March 1714.
73. Apothecaries' Society court minutes, op.cit., Ms. 8200/2, f.123v.;
made free 4 Sept. 1677, f.224r.
74. Commissary court wills, op.cit., Ms. 9171/59, 9 December 1719.
75. Middlesex record office. Ms.DRO. 4/1/2.
76. F.G. Emmison, 'Relief of the poor at Eaton Socon', op.cit., p.76.
77. Ibid., p.76, n.175.
78. Ibid., p.73.
79. Enfield parochial charities accounts, op.cit.,
80. Apothecaries' Society court minutes, op.cit., Ms. 8200/4, f.56v.
81. Edmonton parish register, unpag.
82. D. Avery, Charity begins at home, Edmonton workhouse committee, 1732-37,

83. Local history department of London borough of Enfield,
Palmer's Green Library. Edmonton workhouse
committee minutes, unpag.
84. Ibid., 7 May and 21 May 1733.
85. Local history department, op.cit., Edmonton vestry minutes,
4 April 1742.
86. Edmonton parish register, unpag. 28 May 1757.
87. Private communication from A.F. Benson of Canberra, Australia,
great, great, great grandson of John Hammond.
88. Public Record Office. P.C.C., Prob.11. 1192 (1790).
89. Archive office, Guy's Hospital medical school. Guy's Hospital
register, 'Entry of physicians' and surgeons'
dressers, 1778-1813.';
'Guy's and St. Thomas's Hospitals pupils
and dressers, 1755-1823'.
90. Edmonton vestry minutes, op.cit., 30 June 1790.
91. Royal College of Surgeons' Library. Examination book of the
Company of Surgeons'
William Hammond, diploma, 5 June 1783.
Thomas Hammond, diploma, 3 May 1787, Edmonton.
John Hammond, diploma, 17 March 1795, Enfield.
92. Edmonton parish register, op.cit., Weld chapel records, 4 April 1789.
93. Gentleman's Magazine, 12 November 1794, p.1062.
William Complin's will of 1808 gives an
interesting clue to his type of practice. He
bequeathed to his son-in-law, Nicholas Birch,
surgeon, all his books of physick and surgery,

and to his son, Edward, druggist, all " ...
my books of herbals and dispensary."

See P.C.C., Prob.11. 1473, (1808).

- 94. Registers for pupils and dressers at Guy's Hospital, op.cit.,
- 95. Public Record Office. P.C.C., Prob.11.545, (1837)
- 96. Information from A.F. Benson, op.cit.,
- 97. Examination books of Royal College of Surgeons. Referred for
diploma 1 May 1818; diploma, 21 May 1819.
- 98. Ibid., 17 August 1810; diploma 8 March 1814.

It is probable that Thomas Hammond and
Thomas Blizard were close personal friends as
Hammond's youngest daughter was christened
Harriet Blizard. See Edmonton parish registers,
26 October 1808.

- 99. Medical directory, 1861.
- 100. S.I. Richardson, Edmonton Poor Law Union, Edmonton Hundred Historical
Society, 1965, pp.62,74,82.
- 101. Medical directory, 1862, 1863, 1865.
- 102. Medical directory, 1873, 1882; Sherborne School register, (information
from A.F. Benson)
- 103. I.R./1/2, f.121. Another member of the Snashall family was already
an apothecary and had been trained in London.
See, Apothecaries' Society court minutes,
Ms. 8200/4, f.247 4 June 1706. "Samuel Snashall,
son of Samuel, late of Petworth, Sussex,
mercier, deceased ... bound to John Brown for
8 years."

104. I.R./1/10, f.205; I.R./1/16, f.10; I.R./1/18, f.144.
105. I.R./1/54, f.213; I.R./1/59, f.68.
106. Information supplied by Dr. J. Ridge of Alfriston.
107. This and much subsequent information was received from
Dr. J. Ridge.
108. I.R./1/67, f^x105, October 1795.
109. The Patents' Office. Application No. 2891, 27 October 1862,
sealed 24 April 1863.
110. The Post Office street directory, London, Kelly & Co., 1862, p.309.
111. The Post Office trades directory, London, Kelly & Co. 1862, p.1481.
112. T.D. Whittet, 'The Liverpool Apothecaries' Company',
Chem. & Drugg., 1965, 184:40-1.
113. The Post Office commercial directory, London, Kelly & Co., 1871,
p.1193.
114. The Post Office trades directory, op.cit., 1875, p.157.
115. The Patents' Office. No. 626, 5 February 1883; No. 1634, 31 March 1883;
No. 9346, 19 July 1886, Nos. 6619, 6853,
15,325, 1889; No. 13,664 13 February 1897.
116. The Enfield Local Board of Health did not appoint a Medical Officer
of Health until July 1872.
117. The Enfield Observer, 25 December 1874; 3 July 1875; 14 July 1875.
118. Ibid., 1 January 1875; 8 October 1926.
119. Ibid., 3 January 1880; 23 December 1880.

THE DRUGGIST (b)

Druggists as a separate, and possibly semi-autonomous, group are referred to in the charter of 26 Henry VI, when the Grocers' Company was granted powers over druggists, apothecaries and confectioners as well as their own trade.¹ The charter awarded on 9 March in the fourth year of the reign of James II, after relating the Grocers' trade privileges, declared that the type of trade which former charters had termed 'grocery' was to include that of " ... druggists, tobacconists and tobacco-cutters" and such traders were incorporated into the Grocers' Company.²

R.S. Roberts has written that by the end of the seventeenth century 95% of drug imports came into England via the port of London, and that the trade was almost entirely in the hands of the East India merchants. In the metropolis the drugs were sold by the merchants to druggists who, then acted as wholesalers, and supplied the provincial apothecaries. Many, if not the majority, of these druggists were members of the Grocers' Company.³

An examination of the careers of the Bromfield family to some extent bears out this view. Thomas Bromfield (I) (1643-1711) was an apothecary; a member of the London company he rose to be master in 1706. Details of his type of practice are not known but he wrote papers on scurvy, anaemia, dropsy and intestinal worms. He also introduced his 'Pilulae in Omnes Morbus' which in time came to be known as Bromfield's Pills.

He had one son Thomas (II) by his first marriage and three sons Edward, William and Thomas (III) by the second. The older Thomas became a druggist. He was not apprenticed to his father but to Philip Scarth, a druggist who was a member of the Company of Grocers',

and a very successful one too if his will is to be believed.⁴ Some idea of the materials he handled can be gained from the account books of Messrs. Eastwick and Coningsby. They had a shop and considerable storage space in the form of cellars and garrets known as The Feathers in West Smithfield. On 14 December 1674 Scarth received £4.3s.4d. for 'precipitate' which he had supplied them. On the other hand he paid £22.2s.4d. for rhubarb on 30 August 1683 and in the previous December £2.10s.0d. for Lapis Tutie. Large sums of money regularly passed between the men.⁵

Thomas Bromfield (II) became Scarth's son-in-law but probably did not succeed to the business as there was a Philip Scarth junior. Both young men became members of the Grocers' Company,⁶ although Thomas Bromfield was nothing like as successful as the Scarths. The inventory of his house at Dove Court in the parish of St. Mary Woolnoth shows that he had stored there coffee, black pepper, oyster shell and 14 lbs. of cinchona bark.⁷ His only son Philip became a tea-man, though as the history of Twinings shows he traded probably also as a druggist to a limited extent.⁸

The account books of Messrs. Eastwick and Coningsby are described as being those of an 'apothecary's business' but examination leads one to believe that 'wholesale and retail druggist' might be a better description. With gaps the books cover the years 1651 to 1685.⁹

The sums of money handled were large, such as £144.15s.6d. for cardamoms, £45 for ginger or £40.5s.0d. for musk, and the total value of the goods in 1661 ran to £1,106.13s.8d.; by 1670 they were £1196.8s.8d.

It appears that the 'co-partnership' as it was termed was financed in 1651 by six men, Thomas Weld, Humphrey Jenner, William Hills, Richard Turgis, John Wright and William Marston, and that the day to day

running was carried out by John Coningsby and Francis Eastwick. It is obvious from the first year's trading account of 1652-3 that Thomas Weld and company were not merely sleeping partners but were actively engaged in trade on a large scale, furthermore, they were taking steps to put the co-partnership on a secure footing. On 22 October 1652 each of the six paid £24.2s.7d for his one-sixth share of £144.15s.6d worth of cardamoms, whilst Weld, Hills, Jenner and Turgis each paid £8.10s.0d for aloes, and the same four and William Marston varying sums for ginger. This was a particularly expensive day for William Hills as he paid out also £8.3s.0d for "his halfe of Assaffetida". On 18 May 1653 the six paid their sixth share for buying red coral (total £31.13.0d), ambergreis (total £128) and scammony and barley (total £150).

One week earlier £36 had been received, "Of the Company into the Joint Stock, 1/6th being £6", presumably extra working capital. The credits amounted to £1,610.15s.9d. and debits to £1,613.15s.6d. The balance sheet gives the information that William Hill had supplied the £150 worth of scammony and barley, Edward Bushed the red coral, Francis Clarke the storax, Thomas Prows the cardamons and the aloes, and William Bennitt the ambergrease. Spermaceti had been bought from Thomas Bell and hypocystides from John Langham. Interestingly the Prize Officer had received £141.2s.11d. for goods, on which there was 'excise and other charges' of £4.0s.4d.

Every few weeks Eastwick and Coningsby carried out a rough and simple piece of book-keeping. On the right hand page were listed all payments, even the smallest such as 1s.6d. to the carman or 2d for a bottle, the left hand bore all the receipts. Payments were usually considerably less than receipts so that a healthy balance was left.

The salaries of John Coningsby and Francis Eastwick, sums ranging from £20 to £1, and that of Hugh the Porter's at a shilling, were to be found on the right, together with the quarterly rent to Mr. Lamb of £8.15s.0d., the tithes of 7s.9d., 3s for a pair of shoes for John Gray, a barrel of oysters at 4s and £1.18s.6d. for rasping 77 lbs. of hartshorn.

The left hand page shows that the goods of the partnership were sent far beyond the confines of London. The names of the people paying for the goods included Roger Forbes of Oxford, John Whittle of Aylesbury, William Manning of Beckles (Beccles), John Brown of Uttoxeter, John Stinton of Ashton and John Skydmore of Rickmansworth. Some of them are known to have been apothecaries such as John Nedham who practised in London and John Bott, the others were probably fellow druggists, as were the Scarths, and grocers.¹⁰ Nearly a hundred years later, Robert Carter, James Webster of Leadenhall Street and James Straton in the same West Smithfield must have had similar businesses.¹¹

Amongst the receipts, usually the last item, there was the entry "Rec'd out of the Counter". The sums varied from £10 to over £40. Clearly "The Feathers" had a retail side as well as wholesale but whether sales were made only to the 'trade' or to the public at large as well is not apparent. It should be noted that there were no references to prescriptions or counter prescribing or any form of medical treatment. The yearly stock taking, which ran to some fifteen or sixteen pages, shows that the majority of materials sold were of vegetable origin; those derived from animals were few but included large quantities of musk east and west 'Bezors', mumia, Russian and English castor, ambergrease, crabs claws and foxes lungs.

There was rather more in the way of chemicals and minerals.

Coningsby and Eastwick stocked several salts, for example Sal. Tartari and Sal. Absinthi, and also many earths including rock alum, umber and Terra Lemnia. Amongst the chemicals were borax, white mercury sweet mercury, antimony, double and single Aqua Fortis, white Tartar, sulphur, white copperas, precipitate and 'tartaric vitriolate'.

They had also in stock four dozen ivory glister pipes and 10 gross made of a less exotic material, they had two dozen each of small and large syringes as well. There were no surgical instruments and the only apparatus noted was a brass mortar worth £7 and a copper bottle valued at £1.

It is interesting to note that they stocked many oils, for example Ol. Rosemarin., Ol. Junip., Ol. Sassafras, Ol. Rodium and Ol. Sulphur, and a few spirits such as Spt. Salis, Spt. Sulphur and Spt. Vitriol, but very few compound preparations. They had small quantities of Crocus Martis, Crocus Metalorum, (Confect Alkermes) and but 9 lbs. of London Treacle. Rather more Mitheridate was on the stock list, $9\frac{3}{4}$ lbs. of the better quality at 3s a lb. and 40 lbs. of the poorer at half that price. This suggests that they may possibly have had apparatus for the expression and distillation of oils but that there was no dispensary or laboratory for the compounding of the complicated recipes of the London Pharmacopoeia.

How many apothecaries compounded all their preparations and how many bought them from other apothecaries and druggists it is impossible to say.

The druggists business of Eastwick and Coningsby can be usefully compared with that of William Jones of Covent Garden which flourished a hundred years later.¹² Jones started in Little Russel Street in 1746

and moved to Great Russel Street ten years later. He then described himself as 'chemist and druggist at the Red Cross.' From letters sent between him and his son John in the 1780's it is known that chemicals, vegetable drugs, spirits, distilled waters, oils and galenicals such as Ext. Cathartic, Ext. Thebaïac, Bals. Gilead and Bals. Capivi were sent to apothecaries and surgeons and hospitals all over the Midlands and the West Country. He supplied live vipers, appliances and pewter syringes. It is also obvious from the large number of prescriptions still extant that the Joneses came in the category of 'dispensing chemists and druggists.' The major portion of the prescriptions were for draughts and mixtures.

Miss Watson points out that, "Mr. Jones, like other merchants of substance and reputation, was entrusted with the collection and holding of drafts which were the usual means of paying accounts at a distance. Some were for goods supplied by him but a substantial part of them were held by him as reserve funds to be used as directed by the customer for future disbursement on their behalf ... His banking activities were a very considerable part of his business ... and included the handling of executor and trustee accounts and the investing of surplus funds in government securities such as 4% annuities ..." He handled 3% India Bonds for his customers, supplied the ever popular lottery tickets, fire insurance and paid their stamp duty, land tax and poor rate for them.¹³

An inventory was made in 1761 when Thomas Towers joined Jones for a time. From it, it can be seen that like Sylvanus Bevan thirty years earlier, he had a well equipped laboratory with still, worm and furnace.¹⁴ He was undoubtedly a wholesale druggist in a considerable way but he had also a retail business from which he supplied such domestic remedies as 4 ozs of senna for 10d., chamomile flowers, or 3d worth of carmine to the players in the nearby theatres. The practice of medicine seems to have played but a small part in his business, although his partner,

Towers, (from 1761-6) certainly prescribed medicines and treatment and made postal diagnoses.¹⁵

The origins of the dispensing druggist are far from clear. Following the lead of Bell and Redwood in their Progress of pharmacy, many have stated that these pharmaceutical practitioners may be traced back to those dispensers who were employed by the physicians at their three dispensaries in the cities of London and Westminster.¹⁶ The numbers involved must have been relatively small and could not possibly account for all the dispensing druggists of the two cities, and completely ignores those of the provinces. From the petition laid before Parliament for the proposed Act of 1748, it is apparent that both the apothecaries and the 'elaboratories' which were springing up in the first half of the eighteenth century played their parts. One witness Edmund Stallard related that he had served an apprenticeship to a 'regular apothecary' in London and then had acted as an operator, first to a Mr. Midgley, a chemist, and then to a Mr. Hall, a druggist.¹⁷ This he explained meant that he had become a compounder of medicines. Later he became a partner in the chemical business. Another witness, John Horridge, also told the committee that he had served his apprenticeship with an apothecary and that he was in fact engaged in that capacity at the time of speaking, but before he had set up for himself, he had been an operator at an elaboratory.¹⁸

The difference between the practices of dispensing chemists and druggists and apothecaries was slight and was only a matter of degree which varied with every practitioner. Both operated a shop where drugs, compound preparations and household commodities were sold, both dispensed prescriptions and counter prescribed, both made galenicals and complex recipes, both carried out minor surgical operations in their

shops such as drawing a tooth, lancing a boil or bandaging a wound. There was nevertheless one major difference which became more apparent as the eighteenth century progressed. The apothecary travelled to the patient's house in order to supply and administer the physician's prescribed medicines, and also, as the medical advisor of first instance. The chemist and druggist seems not to have left his shop. The father of John Flint South, the surgeon of St. Thomas's, was a prosperous druggist in Southwark High Street. South related that his father, James South, had been an excellent counter-prescriber, being particularly successful with children and babies; many times he was urged to 'go apothecary' and make outdoor visits but he preferred to stay behind his own counter.¹⁹

Some of the old-established pharmacies can be traced back to having their origins in an apothecary's shop. According to family tradition Rags of Edmonton, Middlesex, started in an apothecary's shop on the Green in 1839,²⁰ and Mackereth's of Ulverston, Lancashire, is claimed to have originated in the practice of an apothecary, Dr. Fell, who was a member of the Fell family of Swarthmore Hall.²¹ It is known that Messrs. Beach and Co. of Bridport, Dorset, dispensing chemists and druggists, was founded by Giles Lawrence Roberts in 1788. He practised first of all as a druggist but later became an apothecary, going to London in 1794 to study anatomy and midwifery, finally obtaining an M.D. of King's College, Aberdeen. His ointment The Poor Man's Friend was one of the best selling 'patent' medicines in Britain in the early nineteenth century. After his death the practice reverted to that of a pharmacy.²² The pharmacy in the Market Place of Faversham, Kent, which is housed in a mediaeval timber framed building can with certitude be traced back to Thomas Clause, apothecary, chemist and druggist, in 1834, and to his

father another Thomas, surgeon and apothecary in 1784.²³

Better authenticated than most is the history of Messrs. Cope and Taylor of the Cornmarket, Derby. The building was erected by William Franceys of Markeaton in 1648. He was a grazier and in the following year he let the premises to a butcher, John Francys. John's son William was an apothecary who became an important figure in the town.²⁴ From the minute book of the gild of mercers it can be seen that he was appointed 'register', that is registrar, to the gild, of which he became warden in 1682 and steward in 1689. He was mayor of Derby in 1697, 1699 and 1700. During his mayoralty he was on excellent terms with Thomas Coke of Melbourne.²⁵ John Franceys transferred the Corn Market premises to William by indenture in 1683.²⁶

William's son, Henry, had a first class education. He attended Derby grammar school from 1700-6, and then went up to Emmanuel College, Cambridge, where he gained a B.A. in 1709 and an M.A. in 1713. He succeeded to his father's practice in 1724. Like his father he was well acquainted with the most influential men of the district. It is related that after the assizes of 1733, when the Duke of Devonshire and Lord James Cavendish came to meet the judge "... the Duke and his friends honoured Mr. Franceys, the apothecary in the Corn Market - a great favourite with the neighbouring gentry - and were entertained at his house until four in the morning."²⁷

For two days in the winter of 1745, the 4th and 5th of December, all eyes in Britain were focused on Derby, for this was the southernmost limit of Prince Charles Edward's incursion into England. In his retinue were Lord and Lady Ogilvie and Mr. & Mrs. Murray of Broughton. (Murray was the Prince's secretary) all of whom lodged with Mr. Franceys.

Having come out of this difficult situation with honour Franceys was made mayor two years later. He died in that year and his son George inherited the business. In its heyday the Franceys house must have been quite sumptuous with double linenfold panelling, the fireplace of the drawing room surmounted by the Franceys' crest of a falcon rising with a grapevine in its beak, and a magnificent painted ceiling in the style of those at Chatsworth, the seat of the dukes of Devonshire.²⁸

The Franceys regime was brought to an end in 1751. Kirkby, followed by Trease, stated that the practice was then in the hands of a partnership formed of F. [rancis] Meynell, surgeon, and Theophilus Brown, apothecary. It would however be equally accurate to term Meynell an apothecary or apothecary-surgeon. It is recorded in the Inland Apprenticeship records that Francis, son of Francis Meynell of Annesley, Staffordshire, gentleman, was apprenticed in 1720 to John Holmes, apothecary of Derby.²⁹ Meynell was also described as an apothecary when he in turn took Edmund Brown as an apprentice in June 1745.³⁰ Whether he was already working with the Franceys at that date is unknown but it is probable.

The Meynells were a family which had been settled at Yeaveley, Staffordshire, and Willington and Meynell Langley in Derbyshire from at least the thirteenth century.³¹ This was not their first contact with the apothecarial world. On 19 December 1648 Richard Meynell, the sixth son of Godfrey Meynell of Willington, gentleman, was bound for eight years to William Page of the London company.³² Eighteen years later he accepted a call upon the livery and by 1673 was renter warden. He died in 1683 leaving a long and informative will.³³

Richard's uncle, Francis (I) went to live in Anslow, Staffordshire

and his two sons, William and Francis (II) received small legacies from their cousin in London. It was Francis's (II) grandson who was apprenticed to John Holmes in 1720. The son of this Francis (IV), John, was not apprenticed to his father but to a surgeon of Derby called Henry Tatam.³⁴ When John Meynell became the apprentice master of Francis Fox in 1775 he was also described as a surgeon.³⁵

Francis Meynell's partner Theophilus Brown signed indentures in 1760 to teach the art of an apothecary to Edward Ley but it is doubtful if he lived to fulfill his task as Meynell was on his own in 1763.³⁶ A year later the first druggist appeared on the scene when Anthony Stevenson became the proprietor.³⁷ In 1767 the apprenticeship records, describing him as a druggist, give the information that he was to be responsible for the training of Charles Woodroffe.³⁸ In 1776 a Dr. J. Berridge was Stevenson's partner, probably an apothecary and surgeon. The next owner of the business according to the title deeds of 1825 was W. Stevenson, dispensing chemist.³⁹ The break between apothecary and chemist and druggist would seem to have occurred at the extreme end of the eighteenth century, the time of the great numerical increase in chemists and druggists.

A rather similar pattern can be seen in the little Huntingdonshire town of Kimbolton. An apothecary, Thomas Peck, in 1776 took a lease on a property at No.1, St. Andrew's Lane, at a rent of £3.10s.0d a year and an immediate expenditure of £50 on repairs. The house dates back to the sixteenth century and it is likely that the present shop was added after 1776. Besides practising as a pharmacist it is known that Peck worked with a Mr. Fernie, surgeon, vaccinator and man-midwife. After his death in 1823, Thomas Peck's son William became the village apothecary, but in 1830 he confined himself to medicine. For the

next fourteen years the druggist's shop was run by a veterinary surgeon until the first druggist took over. The vet's successor, John Watts Tanner, is listed in a directory of 1847 as a 'Druggist, stationer and earthenware dealer.'

Beyond the fact that the same building has been used for pharmaceutical purposes it is difficult to say to what degree the present day pharmacist is a lineal descendant of the eighteenth century apothecary. Except in the case of the Pecks, father and son, none seems to have had any training from their predecessor. In two cases, those of William Peck and Charles Dickens the vet., they hived off the druggist's business, which then seems to have required support from other trades until at least 1920. George Gudgen, Tanner's successor, also sold glass and china, and carried out a fierce verbal battle with the dispensing doctor opposite. Later in life he supplemented increasingly his income by auctioneering. Henry Jones Morgan was even more versatile. He practised as both an optician and a dentist, as so many other pharmacists did in the early part of the twentieth century, and organised local affairs in such a way that the telephone exchange was installed in his shop.⁴⁰

In the nineteenth century chemists and druggists could be divided into two types; the retailer of drugs, both simple and compound, and patent medicines, and the dispensing chemist who dispensed prescriptions, counter prescribed and had a list of 'own lines'. The first type certainly could not survive unless he sold other goods such as groceries, china, glass and ironmongery. Many, perhaps most, aspired to belong to the second category, the first step to which was probably the developing of some speciality. He was often baulked in the full implementation of his desires by the dispensing doctor, especially in

the poorer areas or the suburbs. The Act of 1911 turned every druggist into at least a potential, if not actual, dispensing chemist.

An advertisement in the newspaper The Newcastle Chronicle of 24 November, 1821 clearly shows that a pharmacy could and often did change hands between the various branches of medical practice.

" To Surgeons, Apothecaries and Druggists"

"To be disposed of by a surgeon and apothecary: a good retail business, stock and fixtures: the returns have been gradually and materially increasing for several years and are at present very good with a Prospect of Improvement. Unless immediate application be made, no arrangements can be entered into for reasons which will be explained to any person wishing to become a purchaser. Letter post paid, addressed to Mr. R. Woodrow, Post Office, Edinburgh, will meet with due attention."

The continuity of training between apothecary and druggist is not so easy to follow but an examination of the apprenticeship records of both Chester and Bristol is rewarding.

By examining the records of the Company of Mercers, Ironmongers, Apothecaries and Grocers of Chester, the city registers for the binding of apprentices and for the granting of the Freedom of that city, and the Inland Revenue apprenticeship records an informative succession of apprenticeships can be determined, covering in some cases 150 years. One such 'string' shows that the druggist of the late eighteenth century was a direct descendant of the apothecary of the seventeenth.

I. John Goulborne: apothecary of Restoration Chester who trained a number of apprentices including:-

- i) John Sudlow 8 years from 25 February 1670
- ii) William Yeats 8 years from 25 July 1677

- iii) Robert Lloyd 8 years from 5 November 1683
- iv) Adam Allcocke 7 years from 25 March 1687⁴¹

II. John Sudlow

- i) Francis Touchett 8 years from 1 September 1674,
with a note added to the effect that if
the covenants on the back of the
indenture were performed then he would
have to do only 7 years.
- ii) Nathaniel Brett 8 years from 2 February 1677

III. Francis Touchett He in due course trained:-

- i) Ralph Brown 7 years from 27 February 1690

IV. Ralph Brown trained:-

- i) Peter Ellames 7 years from 29 September 1703
(Gained Freedom 9 October 1710)
- ii) Thomas Davis 7 years from 29 September 1710

V. Peter Ellames He rose to become an alderman of the city of Chester.

- i) James Rowe, son of Thomas Rowe, deceased.

5 years from April 1722⁴²

- ii) Edward Storer, son of Edward Storer of Nottingham.⁴³

Up to this point all apprentice masters
had been described as 'apothecaries' but
on this occasion Peter Ellames' description
was 'apothecary and druggist'.

- iii) Peter Ellames. On being granted his Freedom of Chester on
31 May 1745 it was stated that he was
"Peter Ellames the younger, druggist, son
of Peter Ellames of Chester, Alderman."⁴⁴

- iv) Pattison Ellames. He received his Freedom on 11 May 1762 when it was recorded that he was "Pattison Ellames, druggist, prentice of Peter the Elder, alderman."⁴⁵

VI. Pattison Ellames. He had also his apprentices.

- i) Thomas Meacock 7 years from January 1771.
He obtained his Freedom of Chester on 18 January 1779 in virtue of having been " ... prentice of Pattison Ellames of Chester, druggist."⁴⁶

Pattison's own son, Peter, appears to have moved to Liverpool but nevertheless kept close ties with his native town; on 2 April 1795 it was noted that "Peter Ellames of Liverpool, Esq., son of Pattison Ellames of Chester, Alderman" had been granted the Freedom of Chester.⁴⁷
This is the only case from the Chester records in which the line of continuity can be demonstrated in such detail but that of the Hintons, father and son, is also of interest.

I. Nathaniel Basnett, who took as apprentice:-
(apothecary)

II. Robert Anderson, for 9 years from 1672. He took as apprentice:-
(apothecary)

III. Samuel Hinton, for 8 years from 1682. To him on 1 January 1725 .
(apothecary)
was bound:-

IV. Matthew Hinton. From 1 January 1725. No period of years stated.⁴⁸

When Matthew Hinton gained his Freedom of Chester on 30 December 1730 he was entitled 'apothecary',⁴⁹ but when he ran foul of the Assembly in 1767 he is referred to as a 'druggist'. On 26 March that body read a petition which alleged that Matthew Hinton, druggist, had projected his shop window in Lower Bridge Street to the annoyance of passers-by and

contrary to a recent Assembly order. He was ordered to take down or reduce the windows within one month or the treasurers were to have them removed.⁵⁰

It may be surmised that these druggists who had been trained by apothecaries were dispensers of prescriptions, compounders of medicines and counter prescribers but that Joseph Buckley was a druggist of a less professional type. In 1755, John Buckley, bookseller, gained his Freedom, and his son, Joseph, on 28 October 1771, but in his case as a druggist. Whether he had passed a regular apprenticeship with a druggist is not known, but possibly patent medicine vendor would have been a more accurate description.⁵¹

The civic records of the city of Bristol give a similar picture of a degree of continuity between druggists and apothecaries.

1. William Dale He took as apprentice:-
(Appoticary)

- i) Abraham, son of John Edwards of Axebridge, Somerset for
7 years from 11 October 1591.⁵²

II. Abraham Edwards His apprentices included:-
(Apothecary)

- i) Beavis Mathews. He gained burgess status as a result of his apprenticeship in 1636.(B.2 f.246v.2.)⁵³
- ii) Abraham Edwards. (B.1641. 2:f.309r.3.)⁵⁴
- iii) William Vaughan. (B.1643. 2:319v.3) i.e. 2 f.319v.3

III. Beavis Mathews His apprentices included:-
(Apothecary)

- i) Charles Powell. (B.1644. 2:f.322r.4.)
- ii) John Sessill (or Cecil)(B.1648. 2:f.367r.1.)
- iii) William Purlewont. (B.1659. 3:f.59r.1.)
- iv) Samuel Rogers. (B.1661. 3:f.79v.4.)

IV. John Sessil or Cecil. His apprentices included:-
(Apothecary)

- i) Richard Millechap. (B.1658. 3:f.53r.5.)
- ii) Richard Kerwood. (B.1666. 4:f.73.7.)

V. Richard Mil(l)echa(m)p. His apprentices included:-
(Apothecary)

- i) Nicholas Standfast. (B.1673. 4:f.176.2.)
- ii) John Barnes. (B.1681. 4:f.345.2.)
- iii) John Jones. (B.1692. 4:f.44.2.)
- iv) Daniel Lovering. (B.1698. 4A:f.143.7.)
- v) Richard Noblett. (B.1702. 4A:f.249.1)

VI. Richard Noblett. His apprentices included:-
(Apothecary)

- i) Creswell Hunt. (B.1710. 5:f.89.1.) He had however in the course of his apprenticeship been turned over to Charles Greville (apothecary).
- ii) John Jones. (B.1712. 5:f.134.4.)
- iii) William Hill. (B.1718. 6:f.94.2.)⁵⁵
- iv) William Spencer. (B.1721. 6:f.162.4.)
- v) Edmund, son of Edmund Edwards, potter. Apprenticeship started 24 September 1718.⁵⁶

VII. Elizabeth Noblett, widow and relict of Richard Noblett, druggist, deceased

- i) Thomas Hudson, son of William of Malmesbury, cordwainer.

His service started 17 November 1722.⁵⁷

Except for the Abraham Edwards entry of 1623, all the newly admitted burgesses were stated to be apothecaries as were their masters. No further record of Thomas Hudson has been found; possibly he returned to Malmesbury.

An even more informative line of succession is one beginning with James Freeman, apothecary, who gained his Burgess status in 1676 as a

result of his father being a milliner of Bristol. (B. 1676. 4 f.232.1.)

The line of apprentices may be shown thus:-

James Freeman.

- i) Ebenezer Burdock. (B.1701. 4A:f.220.5.)
- ii) William Morgan. (B.1717. 6: f.76.4.)
- iii) Nicholas Lodge. (B.1725. 6: f.257.6.)
- iv) Samuel Smith. (B.1739. 8: f.83.6.)

In all entries up to this point the master was described as an apothecary, but when Samuel Smith gained his Freedom Nicholas Lodge was termed a wholesale apothecary and druggist.

Samuel Smith signed apprenticeship indentures on 2 May 1745 with Harry Farr Yeatman (or Yateman) and on 8 February 1752 with Robert Fudges Clement.⁵⁸

In the first case Smith was termed an 'apothecary and druggist' and in the second 'druggist'. Yeatman had at least three apprentices:-

- i) William Hussey, son of Robert of Shaftesbury, gentleman.⁵⁹
- ii) Charlton Yeatman, his son.⁶⁰
- iii) Christopher Shute.⁶¹

William Hussey at the time of obtaining his burgeship in 1759 was referred to as an apothecary and druggist, but in the cases of Shute and Yeatman the younger in the year 1781 they were registered as apothecaries.

It is interesting to note that Harry Yeatman obtained his position as a burgess in 1751, not because he had been an apprentice of Samuel Smith, but because he had married Susannah, daughter of Rice Charlton, apothecary of Bristol.

Charlton had been admitted to the Freedom in 1712, having been an apprentice of Charles Gresley, apothecary, and trained many young men.

- i) Shadrach Charlton, son of Edward, a grazier of Church Downe, Glos.,
21. July 1712. I.R./1/43 f. 3.
(B. 1724. 6:f.233.2.)
- ii) John Foord, junior. (B.1729. 7:f.143.3.)
- iii) James, son of David Rossiter of Hannills, Somerset.
(April 1715. I.R./1/44.f.108.)
- iv) Clement Burchall, junior of Cumpton, Wilts.
(Bristol Appr. Bk., 40:f.51 8. Aug. 1726)
- v) Gilbert Cowper, junior of Swindon.
(Ibid. 40:f.69. 7 October 1727)
- vi) Robert, son of Philip Hayward of Market Lavington, Wilts.
(Ibid. 40:f.137. 4 September 1731
B. 1739. 8:155.7.)
- vii) Henry Durbin, son of Thomas of Walton, Somerset, gentleman.
(Ibid. 40:f.167. 13 June 1733.
B. 1747. 10:103.3.)
- viii) Isaac Piquenit, son of Samuel of Bristol, stuffmaker.
(Ibid. 40:f.191. 28 October 1743.
B. 1741. 9:110.2.)
- ix) Rice Charlton, his son. (Ibid. 40:f.249. 12 June 1738)
- x) Anthony Barrett. (B. 1749. 11:f.5. 8.)
- xi) Edward Charlton. (B. 1747. 10:f.55.1.)

All those apprentices who stayed on in Bristol to practise were registered in the burghess books as apothecaries, but all subsequent reference to Henry Durbin, unlike those to Piquenit or other members of the Charlton family, are to Durbin being a chemist. In 1789 Durbin took on Samuel Hart as an apprentice, in which agreement he was described as a chemist, as he was when another apprentice of his, John Stockdale Bastable, became a

burgess in 1779.⁶² Miss Watson in her paper on the Jones's of Great Russell Street, London, writes that Henry Durbin, 'a chymist in Bristol' exchanged goods with him from 1766 to 1786.⁶³

The title 'chemist', though fewer in numbers than that of the druggist, also emerged at an early date and was interwoven into the apothecarial scene. The Bristol burgess books record in 1685 that, "John Nicholson, chimis, is admitted into the liberties of this Citie for that he married Ruth Hester the daughter of John Machen, Draper, a freeman, and hath taken the oath of Allegiance."⁶⁴ He seems to have also practised as an apothecary. Three of his apprentices,

- i) James Jennings. (B. 1701. 4A:f.231. 3.)
- ii) Charles Thurlby. (B. 1702/3. 4A:f. 265.7.) and,
- iii) Edward Ruscombe. (B. 1727. 7:f.100.6.)

were all admitted to the freedom of Bristol as apothecaries.

Furthermore the Inland Revenue apprenticeship records state that on 7 September 1710 John Nicholson, apothecary, and Hester, his wife, took as apprentice George, son of William Jones of Usk, Monmouthshire, gentleman.⁶⁵ The exception would appear to be his own son Francis.

By 1714 John Nicholson was dead and Francis was admitted to the Freedom of the city because he was the son and apprentice of his father, but he was registered as a druggist and not an apothecary.⁶⁶ On 10 December of the same year his mother, Hester, 'widow and relict of John Nicholson, druggist and kemist' took as her apprentice for seven years Edward Dunn, son of Philip of Wigmore, Herefordshire.⁶⁷ He gained his Freedom in 1722 in the same capacity.⁶⁸ It should be noted as well that Thurlby (or Thirlby) although admitted to the burgess book as an apothecary was termed a 'chymist' when Richard Strachey, junior, became his apprentice in 1718.⁶⁹

Possibly in the early use of the titles 'chemist' and 'druggist' there was an exact difference in meaning between them but as the eighteenth century passed it became increasingly common to use the term 'chemist and druggist', frequently shortened to 'chemist etc. or druggist etc'.⁷⁰ As in the case of the surgeons and apothecaries the two terms became completely intermingled. The previously mentioned William Jones of Covent Garden and James South of Southwark both used the two terms indiscriminately. In 1764 Jones was designated 'chymist etc.', five years later 'druggist etc.', and in 1771 just 'druggist', then he and his son John in 1783 used merely the title 'chymists'.⁷¹ When he became the apprentice master of Joseph Filee in 1779 South was termed a 'chemist' but in 1787 a 'druggist etc'.⁷²

The origins of the chemist and druggist or dispensing chemist are obscure but there would seem to be no doubt that the apothecary played an important role in his genesis. Nevertheless the rise of Paracelsianism with the consequent interest in the newly developing science of chemistry and chemicals played a part of some magnitude. One factor which seems to have received insufficient attention is the emergence and increasing popularity of the 'patent' medicine. As production increased, particularly in 'fast-moving lines' as for example Bateman's Drops, Daffy's Elixir or Dr. James' Powders, then 'elaboratories' were required and operators for them. That young apothecaries turned chymist (if only temporarily) worked in them is borne out by the evidence given before parliamentary committee previous to the failed Act of 1748.

Notes and references.

1. W.Herbert, The history of the twelve great livery companies of London,
Newton Abbot, David & Charles facsimile,
1834, 1:326.
2. Ibid., p.324.
3. R.S.Roberts, "The early history of the import of drugs into Britain",
F.N.L.Poynter (editor), The evolution of
pharmacy in Britain, London, Pitman Med. Pub. Co.,
1965, p.171.
4. Guildhall Library, Records of the Grocers' Company, admissions,
Ms. 11596/1, unpag., 6 December 1697.;
Public Record Office. P.C.C. Prob.11 160 (193).
5. Public Record Office. Chancery Master's exhibits. Ms. C.104/130
and 131.
6. Grocers' Company admissions, 1694-1714, op.cit., Ms. 11596/1, unpag.
6 Dec.1697; 15 Feb. 1704.
7. Public Record Office. Probate records, Prob.3 20/206.
8. S.H.Twining, The house of Twining, 1706-1956, London, R. Twining,
1956, pp.16-17.
9. Public Record Office. Chancery Master's exhibits, Ms. C. 104/130-1.
10. J. Burnby, 'Three 17th.century London apothecaries', Pharm. Hist.,
1975, 5:2-3. For a more detailed
discussion of the Botts see pages 432-6
11. A.W.Patterson, 'The Fochaber papers', Pharm. Journ., 1960,
184:213-16.
12. G.M.Watson, "Some eighteenth century trading accounts", in
F.N.L.Poynter (editor), The evolution of
pharmacy in Britain, op.cit., pp.45-77

13. Ibid., pp.58.66.
14. Ibid., p.45; D.Chapman-Huston & E.C.Cripps, Through a city archway, London, J.Murray, 1954, p.16.
15. Miss Watson believes that Towers was an apothecary. There is no record of him being a member of the London company, though it is true that many practising apothecaries were not members of the Society; he may however have been a chemist and druggist in spite of his medical activities. In 1768 and 1772 a Thomas Towers, druggist etc. of St. Mary le Strand took as apprentice Samuel Towers and John Maule. I.R./1/25, f.202, Nov. 1768; I.R./1/27, f.124, June 1772.
16. E.C.Cripps, 'Pharmacy in the 18th and 19th centuries', Pharm. Journ., 1950, 164:30.
17. Mr Midgley was possibly the Charles Midgley, the apprentice of Francis Moulton, apothecary, who was bound on 3 August 1697, "Charles Midgeley, son of John, citizen and scrivener of London ... for 8 years." He encountered some problems when he applied for his Freedom on 7 August, 1705, "Mr.Midgley, apprentice of Mr. Moulton, having served full term was presented for freedom, but not being capable to answer in Pharmacy though understanding Chymistry, to be presented to the Court of Assistants." On 6 November 1705 he was made free with no further comment.

See Apoth. Soc. Court Minutes, 8/200/4,
ff. 55,233, 238. He succeeded Moulton at the
'Glauber's Head', Watling Street, and was
there in 1743. (Information from T.D.Whittet.)

18. 'Attempted legislation in 1748', Chem. & Drugg., 1926, 105:198-9.
19. C.L.Feltce (editor), Memorials of J.F.South, London, Murray, 1884.p.2
20. C.Ragg, Memories of Edmonton Green, Edmonton Hundred Historical
Society, Occ. Paper No.2 (old series), p.2.
21. Information supplied by Mr T.B.Horrocks to Mr D.J. Greaves,
librarian, Ulverston library, April 1977.

This is very possibly the John Fell, apothecary
and surgeon of Ulverston who was taking
apprentices in the years 1769 to 1778.
(Inland Revenue apprenticeship records,
volumes 57,59 and 60) and to whom
Sir Thomas Frankland referred in a letter to
William Curtis in 1781. See W.H.Curtis
William Curtis, 1746-99, Winchester, Warren & Son
1941, p.55.
22. 'Bridport Town's coffee tavern', Chem. & Drugg., 1959, 172:125-7.
23. F.Haley, 'The 300 year tale of a Kent pharmacy', Chem. & Drugg.,
1978, 210:896.; 'A Faversham pharmacy',
Counterscope, Professional Projects Ltd.,
(Bayers) 1962, 1:18:1. The pharmacy's
history can almost certainly be traced back
to an apothecary in 1641.
24. W.Kirkby, 'A 17th. century Midland pharmacy, Cope and Taylor of
Derby', Pharm. Journ., 1935, 134:566-8.

25. Hist. Mss. Comm. 12th Report, London, 1888. Cowper Mss.,
II:413, 24 December 1700, III:157, 17 Jan.1689.
26. W.Kirkby, op.cit., p.566.
27. Ibid., p.566. It would seem that William Franceys had had
another much older son, William, as in a
letter to Thomas Coke, Robert Hardinge wrote
on 14 January 1702, "Mr Gray is ill of a
swelling in his mouth, suspected kin to a
cancer; William Franceys, Junior his Surgeon."
Or possibly Kirkby is in error and
Henry Franceys was the grandson of William
the older, the two Williams having been
confused. See, Cowper Mss., op.cit., II:449.
28. Ibid., p.567.
29. Public Record Office. Inland Revenue apprenticeship records,
I.R./1/7, f.96. Annesley is presumably
a scribal error for Anslow as other
particulars are in accordance with the
Meynell pedigree to be found in the
Wolley Mss., Ms. 6674, f.13 in the British
Library.
30. I.R./1/50, f.269.
31. Wolley Mss. op.cit., Ms. 6674, f.13.
32. Guildhall Library. Apothecaries' Society court minutes,
Ms. 8200/1, f.473.
33. Wolley Mss. op.cit., Ms. 6674, f.15. He wrote that he had lived
in the parish of St. Dunstan's-in-the-East
since he was an apprentice, so he was

bequeathing £10 to the poor of that parish and £20 for the putting out of four 'decayed housekeepers' children' to a craft or trade, provided that they had been born in the parish and were of the Church of England. He gave £6 for a sixth bell to be hung in the steeple, noting carefully that when he had been churchwarden he had noticed that there was a frame for an extra one. He had also an affection for his professional body as he gave to the Apothecaries' Society a silver basin and ewer valued at £40 and engraved with his name and coat of arms. He was a wealthy man and bequeathed many sizeable bequests to his numerous relatives, dividing the residue of his estate consisting of jewels, leases, shares in shipping ventures and land, both copyhold and leasehold, in the City, Essex and Derbyshire between his brother Thomas, rector of Meynell and Kirk Langleys, and his favourite nephew Francis Ullock. He did not forget the four who had been his apprentices either, Richard squire, Richard Wynne, Stephen Jackson and Joseph Newborough. Some idea of his practice can be gathered when it is noted that he requested all his "... eldest and constant patients and customers ..." to come to his funeral.

34. I.R./1/50, f.199, March 1744; f.269, April 1745, but the beginning of the apprenticeship was back-dated to 16 November 1743. Tatam was probably the Henry Tatam who was apprenticed to Nathaniel Edwards, chyrurgeon of Derby in 1721. See I.R./1/47, f.*70, 10 October 1721.
35. I.R./1/59, f.102. Francis Fox, when he in his turn became master to George Allsopp in 1792 was termed a surgeon. See I.R./1/66, f.*38, April 1792. Fox was the father of Sir Charles Fox (1810-1874) consulting and civil engineer. See Dictionary of National Biography, XX:93-4.
36. I.R./1/22, f.*43, June 1760.
37. Kirkby, op.cit., p.567.
38. I.R./1/57, f.198. Woodroffe was possibly a member of that family who were druggists in Stamford, Lincolnshire. See Inland Revenue apprenticeship records volumes 54, 37, 33 and 66.; R. Ellis, 'Pharmacy in Stamford a century ago', Pharm. Hist., 1967, 1:1:4-8, see p.4.
39. Kirkby, op.cit., p.567.
40. R.M. & P.A.Hall, 'Bicentenary of Kimbolton pharmacy', Pharm. Journ., 1976, 217:515-6.
41. At this point the records were kept rather inconsistently. The title page of the book of bindings of the company bears the date 17 May 1675 but bindings are to be found with earlier dates; this possibly accounts for the fact that

John Sudlow appears to have taken an apprentice before he himself was out of his time.

42. All the earlier apprenticeship bindings were found in the book of bindings of the Chester company held by Mr.G.H.Parry, former president of the Freeman and Guilds of Chester. By the 1720's these records were very sporadically kept and James Rowe's apprenticeship was only recorded in the Inland Revenue apprenticeship records. See I.R./1/47, f.¹²⁵, August 1722. He was granted his Freedom of Chester on 16 April 1736 by order of the Assembly when he was termed a druggist. It was probably James' brother, a Charles son of Thomas Rowe, deceased, who was apprenticed to Thomas Golborne, apothecary of Chester, for seven years from 22 April 1723. See I.R./1/48, f.²⁰, September 1723.
43. Chester City Record Office. Records of bindings registered with the civic authorities Ms.M/AP/B1, f.58v.
44. J.H.E. Bennett (editor), The rolls of the freemen of Chester, part II, 1700-1805, Lancashire and Cheshire Record Society, 1908, 55:325.
45. Ibid., p.359.
46. Ibid., p.381.; I.R./1/57, f.⁹⁰, April 1771.
47. Bennett, op.cit., p.411.
48. All four apprenticeships are to be found in the apprenticeship bindings of the Company of Mercers, Ironmongers, Apothecaries and Grocers.
49. Bennett, op.cit., p.279.
50. Chester City Record Office. Ms. AB/4/f.246v.
51. Bennett, op.cit., pp.350,372.
52. Bristol Archives Office. Bristol Apprentice Books, 2:f.303v.7.
53. B. and the year indicates the date burgess status was attained according to the burgess books; the exact reference then follows.

54. This apprentice was his son. The Bristol Apprentice book shows that he was apprenticed to him in 1623 when his occupation was given as 'druggist'. In all other entries (six between 1605 and 1629) he is termed an apothecary. There was often a long lapse between termination of the apprenticeship and application for burgeship.
55. The Apprentice Book shows that he was the son of William Hill of Kidderminster, innholder, and that the apprenticeship began 5 June 1711. This is confirmed by the Inland Revenue records, I.R./1/41, f.60.
56. Bristol Apprenticeship Book, 1711-1725, f.168a.
57. Ibid., f.213a.
58. I.R./1/50, f.282.; Bristol Apprenticeship Books, 1740-60, 41:f.166b.
59. I.R./1/51, f.^x70, 20 August 1752; William Hussey's seven year apprenticeship began 16 April 1752.
60. B.1781. 16:f.184.7.
61. B.1781. 16:f.148.1.
62. I.R./1/65, f.^x75, July 1790.; B.1799. 17:f.109.6.
63. G.M. Watson, op.cit., pp.74-5.
64. B.11 November 1685. 4:f.423.
65. I.R./1/41, f.60.
66. B.1714. 6:f.21.5.
67. Bristol Apprenticeship Book, 1711-1725, f.123b.
68. B.1722. 6:f.193.1.
69. I.R./1/45, f.120.

70. For further details concerning the use of the titles 'chemist' and 'druggist' see tables appended to paper by J.C.L.Burnby, 'Apprenticeship Records', Trans. Brit. Soc. for Hist. Pharm., 1977, 1:4:145-75.
71. I.R./1/24, f.8.; I.R./1/25, f.137., I.R./1/28, f.14.;
I.R./1/32, f.55.
72. I.R./1/30, f.63.; I.R./1/33, f.86.

THE PHARMACEUTICAL WHOLESALE AND MANUFACTURER (c)

Pharmaceutical manufacturing may be defined as the preparation of medicinals on a large scale for retail and wholesale purposes, and necessitates the invention of and experimentation with technical improvements. The seeds of the twentieth century pharmaceutical industry were sown as early as the late seventeenth century and by the end of the next century were in vigorous growth.

The term 'proprietary medicine' or, less correctly, 'patent medicine' has been applied to those for which the sole rights of manufacture were claimed by virtue of a secret formula known only to the preparer; or to a medicine for which letters patent had been granted; or to one to which the preparer has affixed his name or trade mark in the hope of establishing his sole rights of presentation.¹ In the Star Chamber case of 1634 which the College of Physicians brought against the Society of Apothecaries one of their stated grievances was that some of their rivals had private nostrums from which they were undoubtedly deriving much profit, "Cook hath pills and a Medicine called Cooks golden Egg, And Edwards a Water called Edwards Cordiall Water, And Holland Purging bottles called Hollands Bottles."²

Amongst the earliest of these medicines were Dr. Patrick Anderson's Scots Pills and Singleton's Eye Ointment, both of which have been dated back to the first half of the seventeenth century.³ Anderson was a Scots physician but there would seem to be some doubt as to the medical qualifications of the inventor of the mercuric ointment. There is no doubt however that the originator of Daffy's Elixir Salutis was not of the medical fraternity. Thomas Daffy, after being vicar of Harby for nineteen years, came to Redmile, Leicestershire, in 1666, and remained there until his death in 1680, during which time he concocted his elixir.

In spite of its origin in an obscure village in the Vale of Belvoir it soon had a sale over much of England and even in the American colonies. The Postboy of 1707 carried an advertisement which shows that it had soon been taken up by a member of the family who was an apothecary. "Daffy's famous Elixir Salutis prepared by Catherine Daffye, daughter of Mr. Thomas Daffye ... who imparted it to his kinsman, Mr. Anthony Daffye, who published the same to the benefit of the community and his own great advantage. My own brother, Mr. Daniel Daffye, apothecary in Nottingham, made this elixir from the same receipt and sold it there during his life. Those who know it will believe that I declare, and those who do not may be convinced that I am no counterfeit by the colour, taste, smell and operation of my Elixir. To be had at the Hand and Pen, Maiden-lane, Covent Garden."⁴

Not surprisingly apothecaries were well to the fore in the invention and marketing of proprietary medicines. Thomas Bromfield, who has already been mentioned, wrote a pamphlet in 1679 in which he publicised his *Pilulae in omnes Morbos* or Pillsa against all Diseases. Bromfield's pills had a great vogue in the 1670's.⁵ Of greater fame was the cordial elixir of Dr. Richard Stoughton, an apothecary of Southwark.⁶ In 1624 the Statute of Monopolies had given to Parliament the sole right of granting monopolies for the manufacture of products for fourteen years, provided it deemed them advantageous to the country.⁷ Stoughton applied for and obtained a patent for his elixir under this Act in 1712. He had the foresight to use a distinctively shaped bottle.

A common method of advertising the patent medicine was by the 'unsolicited' testimonial or recommendation. One such was to be seen in the Daily Post of 14 July 1736. "These are to certify that I, Richard Sandford, waterman, dwelling in Horsely-down St., near the

Dipping Pond, have a son who was much afflicted with pain in the stomach ... when recollected wife's mother who had a palsy or hemiplegia had been cured by MR JOHN MOORE, apothecary At the Pestle & Mortar in Laurence Pountney's Lane, the first Great Gates on the Left-Hand from Cannon St. I applied to him for relief for my son, who after taking a few worm powders brought forth a WORM (or INSECT) like a Hog-Louse with Legs and hairy, or a kind of Down all over it, and very probably more, but he going to a common Vault they were lost; upon which he is amended."

The advertiser took the opportunity to tell the public at the same time that, "John Moore's Worm medicines and Green-sickness Powders are sold at Mrs. Reader's at the Nine Sugar-Loaves in Hungerford Market, sealed with his Coat of Arms, being a Cross, with the Words, John Moore's Worm Powders etc. inscribed round it: And if any are sold at any place except at his own House, without that seal and inscription, they are counterfeit." Moore sold also Byfield's Sal Volatile Oliosum at 6d per ounce, and a book called, COLUMBARIUM of The Pigeon-House: Being an introduction to a natural history of tame pigeons giving an account of the several species known in England, with the method of breeding them, their distempers and cures.⁸

Charles Angibaud, a Huguenot emigré, placed an advertisement in the London Gazette of October 1683 stating that "Troches, or Juyce of Liquorice of Blois" were sold at his shop in St. Martin's Lane.

Angibaud had once been royal apothecary to Louis XIV. The sale of the liquorice must have proved profitable as there seems to have been considerable jostling for position between Charles Angibaud's nephew, Elie II, and his son Charles II. Elie wrote on 4 July 1749, "Our cousin Miseaubin still continues in her jealousy of me, on account of the

liquorice paste, and when I go to see her she can't stop herself from making insinuations against me although she receives me always in friendly fashion She still continues to have made for her the liquorice paste and has a very good sale for it and I believe that if I could once again come to establish myself with her, I should be able to bring her a good market, because the name does very much good here⁹ Charles II was all of twenty years older than cousin Elie and was already taking life a bit more easily. An announcement in the Daily Advertiser of 5 April 1743 said that "Charles Angibaud, Apothecary, has left off Business, applying himself entirely to Surgery ... he continues to sell the famous Pectoral Lizenges of Blois invented by his father." There was a sale for these lozenges until early in the twentieth century.¹⁰

The post Restoration period saw an increasing interest in the waters of natural springs for medicinal purposes with many attempts being made to discover their active principals. For many, the sale of these waters proved lucrative business, not least for the apothecaries of the day.

In 1700 a manor court ordered, "That the spring lying by the purging well be forthwith brought to the town of Hampstead, at the parish charge, and that the money profits arising therefrom be applied to easing the

poor-rates" An advertisement in the The Postman of 20 April of the same year tells of one who took advantage of the facility.

"Hampstead-Chalbeate Waters sold by Mr. Richd. Philps, Apothecary, at the Eagle and Child in Fleet St. every morning at 3d p. flask, and conveyed to persons at their own houses at one penny p. flask more. The flask to be returned daily."¹¹

One of the major problems in the therapeutic use of natural mineral waters was that in order to enjoy the benefits one had to travel to the

source, because attempts to transport the water, such as that of Mr. Philps, were not attended by success, the water quickly became putrid and contaminated. Analyses of mineral waters led to two alternatives:-

- i) The preparation of artificial mineral waters by dissolving the known salts that they contained in ordinary water - a method suggested by Paracelsus.
- ii) The administering and the extracted salt itself.

John Conyers would seem to have evolved a method which was a combination of the two methods. On 12 May 1679 he wrote on the fly leaf of his memorandum book, "By Mr John Conyers, apothecary at the White Lyon in Fleet Street is prepared and sold an Essence made of the mineral which giveth the virtue to Tunbridge Waters. Any soft water mixed with a little hereof becomes in nature a true Tunbridge water of great use to those who desire to spare their journey to the Wells. Mixed with Tunbridge water itself makes it so much stronger as you please, a great advantage to those especially who cannot bear much. Mixed with Epsom or their Purging waters makes it of the nature of Astrop water. Bottles hereof are to be had at reasonable rates with Directions."¹²

The Epsom waters mentioned by Conyers were to become the centre of a violent quarrel in which may be detected the potent forces of financial greed and power politics between two professional bodies. Dr. Nehemiah Grew, physician, the son of Obadiah Grey^h, D.D. of Atherton, non-conformist and ejected minister at Coventry, like his older half brother Henry Sampson, entered the medical profession. Both took their B.A. at Pembroke Hall, Cambridge, and in the case of Grew an M.D. of Leyden in 1671. He became a fellow of the Royal Society in the same year, and, as has been related, his career as an honorary

fellow of the College of Physicians was somewhat chequered.¹³

He was a great advocate of the salt extracted from Epsom water and in 1695 published a short work in Latin which in translation is entitled A Treatise on the Nature and Use of the Bitter Purging Salt contained in Epsom Water and similar Water.

This extracted salt was a mixture, of which the principal constituent, was magnesium sulphate. Grew extolled its virtues and in 1698 obtained a patent for the medicine, being by no means averse to the pecuniary advantages of commerce. He extracted his salt from a spring at Acton Middlesex and received £1 profit for every 10 lbs of salt sold by his agents. One of his customers, George Moulton, chymist and F.R.S. sold the Acton salt in his shop until he and his younger brother Francis discovered they could obtain the salt for themselves from a spring at Shooters Hill, Kent. They ignored Grew's patent and, partly because their source was even richer in the salt, were able to bring down the price from one shilling an ounce to threepence a pound. To add insult to injury, Francis Moulton then translated Grew's treatise into English and placed it on open sale in his shop, to any who bought the salt.¹⁴ This resulted in a furious attack from the College of Physicians. In spite of the fact that the Moulton brothers referred to themselves as 'chymists' and traded under the sign of Glauber's Head, in Watling St. a sign often used by chemists and druggists,¹⁵ Francis became on 7 July 1691 a member of the Apothecaries' Society.¹⁶

Plagiarism in the lucrative proprietary trade was rife and many were the efforts made to outwit rivals. The Northampton Mercury or the Monday's Post of 24 April 1721 told its readers that Dr Radcliff's famous Purging Elixia (sic) was sold at the Printing Office in Northampton and by the men that carry this News and it was "Seal'd to prevent

Counterfeits with the same Arms as in the Margin of this Paper, and a Label pasted on each Vial with these Words, Dr Radcliffe's Famous Purging Elixir."¹⁷ The Bath Journal was equally reassuring, saying that Dr Boerhaave's Aurea Medicina or the Scots Pill improved could be obtained at Thomas Boddely's Printing-office in Bath, and that it was "Seal'd with Dr Boerhaave's Head in black which was the same as above, and are distinguished from Anderson's Pills by these words round the seal, viz. Dr. Boerhaave's Aurea Medicina."¹⁸ Possibly the first recorded example of this type of 'trade-mark' is to be found in The Scout for 17 November 1647, "I am requested to give intelligence, that those so famous lozenges for the cure of consumptions, coughs, catarrhs, asthmas, hoarseness and other diseases incident to the lungs, are now to be sold at the sign of the Three Castles in East Smithfield, next door to the Star Tavern ... As also an approved antidote against the plague or any other contagious disease. ... And that none may be deceived, his papers have the figure of this Coat of Arms."¹⁹

Burbages and Creswell's Nottingham Journal informed the public that 108 proprietary medicines might be had at Mr Burbage's, and some idea of the variety of retail outlets can be gained from the following advertisement:- "Hayman's Maredant's Drops (late Surgeon Norton's), London. The drops are sold at 5s5d at the following places within the circuit of this paper:-

Boston, Worley, Bookseller.

Chesterfield, Calow, Bookseller.

Derby, Drewry, Printer.

Doncaster, Plummer, Bookseller.

Grantham, Briggs, Grocer

Horncastle, Bromley & Keal, Hull, Brown, Bookseller.

Leicester, Gregory, Printer.

Lincoln, Drummond, Bookseller.

Market Rasen, Sexty, Surgeon

Sheffield, Ward, Printer

Newark, Tomlinson, Bookseller.

Oundle, Tookey, Druggist.

Stamford, Newcomb, Bookseller.

Uppingham, Cooke, Druggist.²⁰

Druggists were obviously much in the minority.

After the first flush of their introduction it seems few of the rapidly proliferating proprietary medicines were due to the enterprise of apothecaries. Bromfield's pills, Stoughton's Elixir and Dalby's carminative certainly owed their origin to apothecaries, but Daffy's elixir and the Widow Welch's pills were the brain children of the medically unqualified, and still others resulted from the activity of men who called themselves 'operative' or 'professional chemists', men such as John Towers who produced Tower's Fluid Extract of Bark and Tower's Chemical Solution of Camphor.²¹

The retailers of these nostrums were more likely to be a bookseller or stationer than a druggist, and the druggist in many cases was probably at least a part-time grocer. About the manufacturers and primary distributors of the medicines we know very little except for the Newberys who had a remarkable flair for publicity. Dr. Robert James patented his famous antimonial fever powders in 1747.²² His close friend and collaborator Samuel Johnson effected the introduction of James to John Newbery, bookseller, in the hope that the latter would interest himself in the marketing of the powders. Newbery was already involved in the patent medicine trade, as witness an advertisement in the

Bath Journal of 13 August 1744 for Greenough's tinctures for the teeth.

"By virtue of the Patents above mentioned, I have appointed John Newbery my only vendor ... apply ... at his Warehouse, the Bible and Crown, near Devereux Court without Temple Bar and at his shop in Reading, Berkshire. ... Merchants, Captains of ships and Country dealers will have good allowances to sell again; and particular Bills in any language will be printed for such as take quantities to Foreign parts. Sold also at my house, near St. Sepulchre's Church on Snow-hill, Thos. Greenough."²³

James' powders proved to be a tremendous success, primarily because of Newbery's clever indirect advertising. John Newbery was an influential figure in the literary world and he and Oliver Goldsmith wrote together Little Goody Two Shoes in which the heroine's father died miserably for want of James' powders.²⁴ For the purpose of distributing these powders and other medicines, the firm of Francis Newbery & Son was founded, which ultimately became part of Sanger's Ltd. (wholesale chemist and druggists) which had grown out of a retail business started in Oxford Street in 1780.²⁵ Most late eighteenth century newspapers carried advertisements such as the following: "Dalby's Carminative, the invention of the late Dalby, apothecary of Welbeck Street, sold by F. Newbery at the East end of St. Paul's, No. 45, five doors from the corner of Cheapside with these words against the front, viz., "The only warehouse for Dr. James' Powder."²⁶

The Newberys were astute enough to appoint their own agents in the provinces, the phrases "other appointed vendors of Newbery's medicines" or "by the appointed vendor of Mr. Newbery's medicines in other county towns" often occurring in newspaper advertisements. By the early nineteenth century 'Messrs. Butler's, chemist, Cheapside, corner of St. Paul's, London' were informing people that they were "appointed sole

agent for Dr. James' Powders in place of Newbery & Sons."²⁷

This was Charles Butler of 4, Cheapside, St. Paul's, who supplied his own Butler's Fluid Extract of Sarsparilla, the preparations of John Lignum and son, surgeons of Manchester, such as Lignum's anti-Scorbutic drops, and the well known Dr. Boerhaave's Red Pill.²⁸

Other products, for example Dr. Hooper's female pills, which in 1786 had been 'established upward of 40 years', the Newberys often shared with Thomas Dicey and Co. at Dr. Bateman's warehouse, No.10 Bow Churchyard.²⁹ At that time Dicey's claimed to have been preparing the true Daffy's elixir for upwards of fifty years. By 1800

The Hull Packet informed its readers that the same true elixir was now being made by John Wye (late partner with Dicey & Co.) at his medical warehouse, No. 59 Coleman Street, London.³⁰ Dicey's had become Dicey & Sutton but by the 1840's it was W. Sutton & Co. of 10, Bow Church Yard. A warehouse was later established in Enfield and it was only in 1967 that the company finally collapsed.

Others who advertised were:-

E. Edwards, 67, St. Paul's churchyard on the Footway.

(Amboyna Powder Lotion)³¹

Mr. Spilsbury, chemist, at his dispensary, Soho Square.

(Spilsbury's anti-scorbutic drops.)³²

Mr. B. Cornwell, at his house No.13, Conduit Street, Hanover Sq.

(Oriental vegetable cordial, both wholesale & retail)³³

Jackson's & Co., Medicinal Warehouse, No.95, Fleet Street.

(Jackson's famous asthmatic candy)³⁴

Surprisingly little is known of these men and it is a field for further study. A comparison may usefully be drawn with the Swinfens of Leicestershire. Richard Swinfen was an apothecary of Hinckley and

there his son Edmund was born in 1760, the year in which he took another Edmund Swinfen as an apprentice.³⁵ Later Richard moved to Leicester where he and his son were in partnership. Edmund purchased his freedom of the town at a cost of £20. He was an alderman for many years and became mayor in 1804. During the course of his career he was variously referred to as 'surgeon', 'druggist' 'chymist' and 'apothecary'. On his death in 1811 he left his business to his son Richard B. Swinfen and in his will wrote that he had delivered to him, "the receipts and prescriptions whence all nostrums or proprietary medicines are prepared" and that he had fully instructed him regarding the true and genuine composition and had not made these things known to anyone else. These would have included Swinfen's Electuary which was advertised in the Leicester and Nottingham Journal of 4 December 1773 by Swinfen, surgeon of Hinckley. In an advertisement of 1792 Richard Swinfen & Son refer to their 'genuine Medical warehouse' where they had just received some of Norton's Maredant Drops, 'prepared by Mrs. Lewis, successor to the late Surgeon Norton', and again in 1808 there is a reference to 'Edmund Swinfen, druggists, genuine and general Drug, Medicine & Perfume Warehouse opposite to the Conduit in the Market Place, Leicester.'³⁶

A medicine warehouse would therefore seem to be a laboratory where proprietary medicines were prepared for wholesale and retail sale. The Swinfens were a highly respected dynasty of apothecaries and druggists. No other pharmacists in Leicester trained so many apprentices, (at least fourteen) and they could command premiums of £100 to £150.³⁷ Crellin is of the opinion that the Swinfens were important members of the 20% of chemists and druggists in Leicester who noticeably contributed to the better standing of Leicester pharmacy.³⁸ There is no reason to believe that the London owners of medicine warehouses were any less respectable

or more involved in the dubious world of 'quackery'.

The path taken from apothecary to pharmaceutical wholesaler and manufacturer can be exactly followed in a number of cases. A firm of considerable note was Corbyn, Stacey & Co. The company's origins lie with a Quaker Joseph Clutton, son of John and Mary Clutton of Pensax, Worcestershire. John was termed 'esquire' so presumably the family was of some position. His son, Joseph, became a citizen and apothecary of London and in 1725 married Mary Morris of Rugely, Staffordshire, the daughter of Richard Morris, apothecary. They had seven children but only Morris, born 1726, and Mary, born 1738, survived into adulthood.³⁹ Joseph must have practised medicine as he wrote on medical topics. He issued a pamphlet on the subject of Joshua Ward's medicines in 1736 which included an estimate that 16,380 of Ward's pills could be made for 1s.3¹/₂d. He was an ardent collector of botanical specimens and was a correspondent of Richard Richardson, M.D. (Oxford) of Bierley, Yorkshire.⁴⁰ He supplied also materia medica cabinets. A splendid six drawered specimen in the Oglander Collection, Oxford, has a bill within it which says Thomas Jobber Esq.;, bought it from Jos. Clutton of Holbourn in April 1729. It contained 1,032 specimens and cost £21.6s8d exclusive of the work of setting and labelling of the plants, minerals and drugs or animal origin which had taken 60 days and was left at the purchasers' pleasure.⁴¹

Amongst his apprentices were James Smith of Salop, who came to the metropolis in 1717, Eldridge, son of John Beale, a malster of Hertford, and Thomas Corbyn.⁴² Corbyn's parents, John and Candia of Worcester, like his master, were Quakers. Morris Clutton and Thomas Corbyn went into partnership some time after the death of Joseph in 1743. When he died he had been supplying chemicals to the County Hospital, Winchester for four years, and it was decided at a court of the governors that

Mrs. Clutton should continue to supply the hospital with 'chymical medicine'. It is interesting to note that he was referred to as 'Mr Clutton, chymist'.⁴³

Young Clutton and Corbyn appear to have forsaken the practice of medicine and concentrated on the trade of drugs and chemicals. Morris was the originator of Clutton's Febrifuge.⁴⁴ Trade had already started with the American colonies in Joseph Clutton's day, and as the eighteenth century progressed the partnership became one of the chief suppliers of drugs to America and the West Indies.⁴⁵

Morris Clutton died in 1755; according to the London Directory of 1758 a James Clutton was associated with the business in Holborn, but he was gone by 1763. The first of four Staceys, all Friends, joined in 1772.⁴⁶ By 1789 there were two more partners and the London Directory referred to them as "Corbyn, Beaumont, Stacey & Messer, Chemists and Druggists, 300, High Holborn." On 1st March of that year they produced a catalogue entitled, "Chemical and Galenical Medicine truly prepared and sold with all sorts of Drugs, by Thomas Corbyn & Co., Chemist & Druggists, at the Bell and Dragon in Holborn, London, 1 month, 1, 1789."⁴⁷

Corbyn was associated with John Fothergill in a scheme for buying food at wholesale prices in order to sell cheaply to the poor.⁴⁸ He was said to be an enthusiastic gardener. Although a stern disciplinarian and noted for being clad from top to toe in drab materials he used frequently to lend money to young men starting in business - money which was often lost. He became interested in insurance and wrote in the Morning Chronicle an article called, "Advantage of insurers or underwriters to merchants and traders exporting goods."⁴⁹ Born in 1711 he died aged eighty; his son John was the last of the Corbyns.⁵⁰

The Staceys now proved to be the most stable element of the firm.

George Stacey senior (1749-1816) was the son of William and Rebecca Stacey

of Alton, Hampshire. It is not known how or with whom he trained but on the occasion of his marriage in 1782 to Mary Wilson of Kendal he was described as a druggist of the parish of St. Andrew's, Holborn. He was said to be of a withdrawn personality and had few intimate friends. He died in Tottenham in 1816 aged 66. His second son, George junior, (1786-1857) followed in the business and on his marriage in 1818 to Deborah Lloyd, daughter of Samuel and Rachel Lloyd of Birmingham - the bankers - he was termed a 'chemist'. Like his father he was an active Friend. Of his children, Mary married Arthur Albright the founder of Messrs. Albright and Wilson in 1848, George, born 24 March 1824 became a partner of Corbyn & Co., and his younger brother Samuel Lloyd was the donor of the materia medica chest to the Pharmaceutical Society.⁵¹

Many other names have been added from time to time, such as Swaine, Beaumont, Messer and Brown, other businesses were bought up, for example, Messrs. Winstanley and Son of 7, The Poultry which is said to date back to 1658, Messrs. Darby and Gosden, and George Butler of Cheapside. A West End retail shop, 86 New Bond Street, was obtained by buying Bucklee and Taylor Bros. in 1870; a City office opened at 22 Great St. Helens in 1897; the wholesale laboratory was continued at 300 High Holborn until 1908 when it was moved to 673, Commercial Road. By the very end of the nineteenth century the firm had decided to move out of retail and concentrate solely on wholesale; the Bond Street shop was sold to Frank A. Rogers in 1894; 51 High Holborn to M. Curtis in 1897 and No. 300 of the same road closed its retail doors on 25 January 1896.⁵²

Another firm whose origins can be traced back to the founding apothecary is Messrs Mawson and Proctor of Newcastle on Tyne. It is related that in the autumn of 1768, John Proctor, apothecary, opened a shop in the Side, Newcastle, and that he was followed by his son and grandson.

By the time of the latter, Barnard Simpson Proctor, the business had been moved to Grey Street and medical practice, if it had ever figured largely, had been forgotten. Barnard, born in 1829, was a member of the Pharmaceutical Society's council in 1863, and from 1867 to 1869 was an examiner. During the last year he was appointed lecturer in pharmacy at the medical school of Durham University. His books 'Practical pharmacy' and 'Manual of pharmaceutical testing' were standard works for students. He retired in 1898. He was followed by Maltby Clague who had joined the practice in 1885 and later became a partner. Clague worked with Sir Thomas Oliver into the causes of lead poisoning and "phossy" jaw. In 1912 Proctor, Son & Clague amalgamated with another distinguished Newcastle firm, Mawson & Swan.⁵³

John Mawson, a Penrith man and druggist, went to Sunderland for a while and then opened a shop in Newcastle, also in the Side.⁵⁴ He was a man of great charm and business ability. In 1846 he was joined by Joseph Wilson Swan who was eighteen. Three years previously Swan had been apprenticed to the chemist and druggists firm of Hudson & Osbaldiston of Sunderland for six years but both the principals dying in the first three years he became free to join his friend Mawson in the neighbouring town.⁵⁵ Mawson did much to encourage the young man in his scientific pursuits and Swan developed a close friendship with Barnard Proctor, John Glover the inventor of the Glover tower, and John and Hugh Lee Pattinson, the discoverers of the lead desilvering process of that name.⁵⁶ The tie between Mawson and Swan became even closer with the marriage of the former to Joseph's sister, Elizabeth. Soon afterwards Swan was taken into partnership.

Swan was already acting as a consultant, particularly in photography,

to Tyneside scientists and chemical manufacturers; he added the large scale manufacture of collodion to the firm's activities, and then the sale of scientific apparatus. The business was moved to Mosley Street and there Swan built over it a photographic studio. His experimentation there culminated in 1864 in a successful method of carrying out the 'carbon process', a form of photographic printing.⁵⁷

Mawson had always had an interest in local politics and in due course became sheriff of Newcastle. In this capacity in 1867 he was helping to dispose of a large quantity of nitro-glycerin when he and his helpers were blown-up and killed. Swan was then left with the burden of being responsible for Mawson's new venture of importing yeast on a vast scale and the shop as well as his own ploys.⁵⁸ He was eminently successful in all he undertook; he added an art and book shop to their activities and at the same time was involved in the research which was to result in the carbon filament lamp.⁵⁹

In 1881, George Weddell, a Scots pharmacist was appointed to manage the dispensing business. He experimented with the addition of phosphates to ordinary common salt and finally perfected a dry salt by the addition of calcium phosphate which is marketed to this day under the name of 'Cerebos'. Weddell published many books for chemists.⁶⁰ The merged partnerships continued to flourish and happily both retail and wholesale branches are still with us.

Of even greater fame than Corbyn's or Mawson and Proctor's, is Allen and Hanbury's. The year of 1715 was a momentous one for 24 year old Silvanus Bevan. On 5 July at the Society of Apothecaries', London, he was examined, approved, sworn and made free, having served seven years with Thomas Mayleigh. He paid a fine of £6.9s.0d for the remainder of his time⁶¹. On 10 November he married Elizabeth,

daughter of Daniel Quare, citizen and clockmaker to the royal court.⁶²

It is probable that he moved into 2, Plough Court which he had leased from a fellow Quaker, Salem Osgood, linendraper, in either the December or possibly January 1716.⁶³

The following year he took as apprentice Francis, the son of James Freeman of Newington, Middlesex, gentleman, for eight years. Mr. Freeman paid a premium of £60.⁶⁴ That Bevan flourished can be seen, because in 1725 he not only re-newed his lease with John Osgood but also leased the next door tenement, No. 3 Plough Court.⁶⁵ The records of the Apothecaries' Company state that on 11 March, 1731 "Mr Timothy Bevan, who as he says has been bred an Apothecary, in the country, and has been some time with his brother, Mr Silvanus Bevan, a Member of this Company, desires his Freedom of this Society by Redemption; ordered - that on payment of £25, and 40s. to the Garden and the usual Fees, and passing an Examination, he be made free. He was admitted to the Freedom accordingly on 6 April 1731."⁶⁶

Sometime after the partnership was formed the brothers issued a wholesale list entitled, "A catalogue of Drugs and of Chemical and Galenical Medicines, prepared and sold by Silvanus and Timothy Bevan in Plow Court, in Lombard Street, London." It is interesting to note that no 'patent' medicines are mentioned, so presumably the Bevans regarded them as no part of their trade.⁶⁷ They dispensed prescriptions, doubtless counter-prescribed, and travelled in order to increase their wholesale trade, and Silvanus at least, was a medical practitioner.

The Morris Letters, the writer having been to visit him at Hackney, relate that, "He was bred a chymist and apothecary, but has practised as physician for many years." In a letter to Dr. Jurin, Bevan described how he had been called in to examine a girl of fifteen who had deliberately

inoculated herself with small-pox; this had confirmed his observations that the disease resulting from inoculation developed more quickly than that from natural causes. This he felt should be made known to all "those who Practise Physick." He was sufficiently curious to undertake a post mortem examination of a woman whose bones had become 'soft and flexible'.⁶⁸ His findings he made known to the Royal Society to which he had been elected in 1725 having been nominated by Henry Heathcote.⁶⁹

The London Directory of 1736 describes Silvanus and Timothy Bevan as being, "Apothecaries, Lombard Street", but Timothy does not seem to have followed his brother in practising medicine.⁷⁰ On Silvanus' death in 1765, as he was childless, the firm came to be run by Timothy and his two older sons. In the directory of 1766 they are termed "Druggists & Chemists." Like the Corbys, the Bevans became deeply involved in the overseas trade. On the strong recommendation of Dr. John Fothergill they became in 1765 the suppliers of the first shipment of drugs to the newly established Pennsylvania Hospital in Philadelphia.⁷¹ The younger son Silvanus (III) left the business to become a banker in 1767 and the elder, Timothy (II) died in 1773. Their father was then on his own for the next two years, after which he relinquished his control in favour of his youngest son, Joseph Gurney Bevan, the half-brother of the older two.⁷²

It is at this point that the complete break was made with the firm's apothecarial origins. Joseph Bevan made no attempt to become a member of the Society of Apothecaries or even of the Grocers' Company, indeed he joined no London company until 1789 when he was 35. Why he chose the Woolmen's is not known. The records contain the following, "Joseph Gurney Bevan of Plough Court, Lombard Street, London, druggist, was admitted to the Freedom of this Company by Patrimony, 3rd. March 1789." He paid the sum of £1.⁷³ This was the beginning of a close relationship

between Plough Court and the Woolmen's Company. The even better known

William Allen, druggist, obtained his freedom by redemption on

18 October 1800, paying a mere £1.18s.6d a modest sum compared with

the £20 to £25 redemption fine demanded by the Apothecaries'.⁷⁴

Both of Allen's apprentices, Cornelius and Daniel Bell Hanbury, were

admitted by reason of servitude on 23 January 1818. They each paid 18s.4d.⁷⁵

The flourishing overseas trade continued and was not even completely severed by the American War of Independence. The work of the laboratory increased and in the 1790's came under the supervision for a while of a German and then of the remarkable Joseph Jewell. J.C. Bevan retired from the concern in July 1794 at the age of forty and thus ended the Bevan connection.

For the next two and a half years the company was under the guidance of Samuel Mildred, whose father was of the firm of Messrs. Mildred & Roberts.

In a notice to his customers Bevan described him as "a young man who

has been educated in the chemical business."⁷⁶ In January 1792 a young

Quaker, William Allen, with strong chemical inclinations accepted the

offer of a position by Joseph Bevan at his 'chemical establishment', and

so left the silk trade.⁷⁷

A good business man, he had also wide scientific and philanthropic interests; from early years he had conducted chemical experiments to his parents' disapproval. After he came to Plough Court he became a physician's pupil at St. Thomas's Hospital, a member of the Physical Society at Guy's, studied chemistry under Bryan Higgins, went to lectures at the Royal Institution, (and was eventually to become a lecturer there himself) investigated botany with his friend Lewis Dillwyn and with Samuel Mildred started a laboratory for making chemicals at Plaistow.⁷⁸

He was taken into partnership in January 1795 and took over full responsibility

when he bought out Mildred for £525 in the August of 1797.⁷⁹

In the place of Mildred came Luke Howard, and from 1797 to 1806 the business was conducted as Allen & Howard. Luke had been apprenticed to Ollive Sims, a chemist and druggist of Stockport, and the apprentice-master of many aspiring pharmacists.⁸⁰ Sims was a devotee of botany and he and the young Howard used to walk the wild moors near Kinderscout in their search for botanical specimens.⁸¹ The two young men were kindred spirits with their interest in botany, chemistry and natural phenomena. They and other young scientists formed the Askesian Society at Plough Court with the express intention of reading papers and conducting experiments twice a month. It was before this society that Luke Howard read his classic paper in 1803 on cloud formations. Allen was much involved in the formation of the Royal Jennerian Institution and was elected a fellow of the Royal Society in 1807.⁸²

The partnership was fruitful, with the result that both sides of the business, chemical and galenical, were expanded. Howard was particularly adept at devising chemical apparatus and concentrated on the production of heavy chemicals and on certain processes such as the sublimation of camphor. At Plaistow he became responsible for what was then large scale work, for example in 1799 he distilled 174 lbs. of Ol. Menth.Pip. from the herb.⁸³ Allen's activities on the other hand were more concerned with galenicals and the manufacture of chemicals on a small scale requiring skill and specialised knowledge, such as chemical reagents. In 1805 31½ ounces of malleable platinum, possibly the first to be manufactured in Britain, were made in the laboratory at Plough Court at a cost of £18.1s.10d.⁸⁴

Nevertheless the two decided to go their separate ways and the partnership was amicably dissolved in 1806, Luke Howard passing on to form the well known chemical firm of Howards of Ilford.

British Drug Houses (the pharmaceutical division now being a part of Glaxo) was formed in 1908 by the amalgamation of seven firms, six of which had their origins in the eighteenth century. The earliest can be traced back to a larger than life size character known as 'Colonel' Dalmahoy, chemist and apothecary, who had a business at the sign of Glauber's Head in Ludgate Hill.⁸⁵ Alexander Dalmahoy was the son of a Southwark surgeon and was apprenticed to Francis Dalby, citizen and apothecary, for eight years in 1737.⁸⁶ His practice seems to have embraced both medicine and pharmacy in their widest senses if the intriguing pieces of doggerel surrounding his name are anything to go on:-

"If you would see a noble wig,
And in that wig a man look big,
To Ludgate Hill repair, my boy,
And gaze on Doctor Delmahoy."⁸⁷

and by way of epitaph:-

"Delmahoy sold infusions and lotions,
Decoctions and gargles and pills;
Electuaries, powders and potions,
Spermaceti, salts, scammony, squills.
"Horse aloes, burnt alum, agaric,
Balm, benzoine, blood-stone, and dill;
Castor, camphor, and acid tartaric,
With specifics for every ill.

"But with all his specifics in store,
Death on Delmahoy one day did pop;...."⁸⁸

Besides the not inconsiderable number of items listed above he also supplied medicine chests and advertised his 'curious smelling Bottle'

in French as the 'Bouteille de Senteur'.⁸⁹ He styled himself as 'chemist to Her Majesty'.

The apothecarial origins of four well known wholesale and manufacturing firms have been discussed in some detail, but nevertheless it would be true to say that such founders are in the minority, and more companies can trace their foundation to a chemist and druggist.⁹⁰

Notes and references.

1. L.G. Matthews, History of Pharmacy in Britain, 1962, E. & S. Livingstone
Edinburgh, p.282.
2. C. Wall, H.C. Cameron & E.A. Underwood, A history of the Worshipful
Society of Apothecaries of London, Oxford,
University Press, 1963, 1:283.
3. Matthews, op.cit., p.291.
4. J.B. Firth, Highways and byways in Leicestershire, 1926, Macmillan,
London, p.376.
5. A. Ellis, Penny university, ^{London,} 1956, Secker & Warburg, p.138.
6. Apothecaries' Society court minutes, Ms.8200/2, f.254. 3 February 1679.
"Richard Stoughton, son of Richard of Surrey,
yeoman, ... bound to Peter Barton for 8 years."
Ms. 8200/4, f.228. 5 April 1687. He was
made free. At a later date he acquired the
title of 'doctor'. See Ms. 8200/4, f.233.
7 August 1705. "Richard Stoughton, son of
Richard Stoughton, citizen and apothecary,
bound to his father for 8 years."
Ms. 8200/4, f.414. 1 December 1713.
"Richard Stoughton, son of Dr. Richard Stoughton,
having done the full years with his father
made free."
7. Matthews, op.cit., p.282.
8. The originator of the worm powders may well have been the John Moore,
apothecary of the parish of St. Mary Woolnoth
cum St. Mary Woolchurch-haw, who with his wife,
Rachel, between the years 1701 and 1708

baptised James, John, Rachell, Lucretia
and another John, and buried Edward, James
(two of them) and John. See parish register,
Guildhall Library.

9. P. Julien, 'Angibaud and the pastilles of Blois', Pharm. Journ.,
1966, 196:290.
10. A Lothian Short, 'Charles Angibaud and his mortar', Pharm. Journ.,
1966, 196:287-8.
11. W. Andrews, Bygone Middlesex, London, The Hull Press, 1899, p.185.
12. British Library. Sloane Mss., Ms.958.
13. J.W. Walker (transcriber & editor), Hunter's Pedigrees,
Harleian Society, 88:83.; See p. 61.
14. M.P. Earles, 'Cutting the tapestry', Pharm. Hist., 1972, 2:4:unpag.
15. B. Lillywhite, London Signs, London, Allen & Unwin, 1972, p.214.
16. Apothecaries' Society court minutes. Ms. 8200/3, f.326.

"Francis Moulton, apprentice of Charles Feltham
having served part of his time with him and
then sueing out his Indre. hath lived ever
since with his brother, a Chimist, was made
free."

He does not appear to have been in favour with
the Society as witness two entries in the
court minutes. Ms. 8200/4, f.188. 26 August
1703. "For divers reasons not let
Mr Fr. Moulton be admitted as a subscriber to
the new stock for the navy." Ms. 8200/5,
f.27v. 13 August 1719. "Mr Moulton having
in 1692 paid £20 upon account of a share in

the Laboratory, which was after refused ... "

In 1695 George Molte [sic] chemist was a partner of Thomas Wilson in the parish of St. Mary Magdalene, Old Fish Street.

See London Inhabitants within the walls, 1695, London, London Record Society, 1966, p.205.

17. Northampton Mercury or the Monday's Post, 24 April 1721, 1:624.
18. The Bath Journal, 13 August 1744, 1:unpag.
19. W.L.F. Nuttall, 'Newspapers and their advertisements in the Commonwealth', History today, 1967, XVII:460-67, see p.465.
20. Creswell and Burbage's Nottingham Journal, 2 and 9 September 1786.
21. The Sheffield Iris, 27 April, 4 May 1830. He was possibly related to Thomas Tower(s), druggist etc. of St. Mary le Strand, who took Samuel Towers as an apprentice in 1768 and John Maule in 1772. See Inland Revenue apprenticeship records, I.R./1/25, f.202.; I.R./1/27, f.124.
22. Matthews, op.cit., p.293.
23. Bath Journal, op.cit., 13 August 1744.
24. J.K. Crellin, 'A note on Dr. James's fever powder', Trans. Brit. Soc. for Hist. Pharm., 1:3:142, references 8 and 10.
25. Matthews, op.cit., pp.287-8.
26. Nottingham Journal, op.cit., 2 September 1786.
27. Sheffield Iris, op.cit., 9 March 1830.
28. Ibid., 6 December 1828.
29. Nottingham Journal, op.cit., 9 September 1786.
30. The Hull Packet, 9 September 1800.

31. Sheffield Iris, op.cit., 23 March 1830.
32. Nottingham Journal, op.cit., 30 September 1786. Seven years earlier
'Francis Spilsbury, Chymist' had his
dispensary at 'Mount-Row, Westminster-Bridge,
Surry', and as at Soho Square was charging a
guinea for letters of advice or for a
consultation in the morning. See The Cumberland
Pacquet, 30 March 1779.
33. Nottingham Journal, op.cit., 8 June 1786.
34. Ibid., 30 September 1786.
35. Inland Revenue apprenticeship records, I.R./1/22, f.^x40, June 1760.
36. Leicester Herald, 5 May 1792; 22 January 1808. For this information
I am indebted to Dr. T.D. Whittet.
37. L.G. Matthews, 'Byways of pharmaceutical history', Pharm. Journ.,
1963, 191:631.
38. J.K. Crellin, 'Leicester and 19th century provincial pharmacy',
Pharm. Journ., 1965, 195:417-8.
39. The Friends' Library, Euston Road, London, Friends' biographies,
typescripts.
40. D. Turner (editor), Extracts from the literary and scientific
correspondence of Richard Richardson, M.D., F.R.S.
Yarmouth, 1835, pp.250-2.

In June 1726 Clutton wrote to Richardson to
thank him for a parcel of plants, he was
particularly pleased with the mosses and the
exotics. Rand, the demonstrator of the
Chelsea Physick Garden, was helping him in the
naming of the plants of his collection.

41. 'Materia medica collections in Oxford', Chem. & Drugg. 1937,
126:747.; 'Honoured weapons of science:
Museum of History of Science, Oxford',
Chem. & Drugg., 161:666. His own materia
medica cabinet was a very fine specimen
which a later member of the firm gave to the
Pharmaceutical Society. See A. Lothian Short,
'Corbyn, Stacey & Co., a note on their
antiques', Pharm. Journ., 1967, 199:211.
42. I.R./1/6, f.7.; I.R./1/8, f.3.; Lothian Short (Corbyn & Co.)
op.cit., p.211.
43. 'London wholesalers in 1863 and now', Chem. & Drugg., 1913,
83:143-9, see p.145.
44. Ibid., p.145. Morris Clutton was member of the London Apothecaries'
Society. See their court minutes, Ms. 8200/7,
f.20r. 7 July 1747. "Morris Clutton, son
and late apprentice of Mr. Joseph Clutton, dec'd.
for 8 years with his said late father and
his mother, relict and executrix ... took his
affirmation and was made free."
45. 'London wholesalers ...', op.cit., p.145.; Lothian Short,
(Corbyn & Co.), op.cit., p.211.
46. Ibid., p.211.
47. Ibid., p.211-12.
48. M. Stiles, "The Quakers in pharmacy", in F.N.L. Poynter (editor)
The evolution of pharmacy in Britain, London,
Pitman Med. Pub. Co., 1965, pp.113-129,
see p.117.

49. Friends' biographies, op.cit.,
50. Lothian Short (Corbyn & Co.), op.cit., p.211.
51. Friends' biographies, op.cit.,
52. 'London wholesalers ...', op.cit., p.145.
53. 'Wholesaler's bicentenary', Pharm. Journ., 1968, 201:523.
54. Ibid., p.523. The date for the founding of Mawson's shop is
given as 1828 but there is some doubt as to
its accuracy.
55. M.E. Swan & K.R. Swan, Sir Joseph wilson Swan, inventor and scientist,
Newcastle-upon-Tyne, Oriel, 1966 re-print, p.21.
56. Ibid., p.27.
57. Ibid., pp.30,31.
58. 'Wholesaler's bicentenary', op.cit., p.523.
59. Swan & Swan, op.cit., pp.48,53.
60. Matthews, op.cit., p.239.
61. E.C. Cripps, Plough Court: the story of a notable pharmacy, London,
Allen & Hanbury, 1927, p.9.
62. Ibid., p.9.
63. Ibid., p.11.
64. Inland Revenue apprenticeship records, I.R./1/4, f.210.
65. Cripps, op.cit., p.12.
66. D. Chapman-Huston & E.C. Cripps, Through a city archway, London,
Murray, 1954, p.23.
67. Ibid., pp.17,18.
68. Chapman-Huston & Cripps, op.cit., p.19.
69. Ibid., p.19 Bevan married Martha, the daughter of the well known
Quaker physician Dr. Gilbert Heathcote, in 1719.

70. Silvanus Bevan's best known apprentice, William Cookworthy, (1705-80) also seems never to have practised medicine. He was set up in partnership with them in 1726 in Plymouth in a firm of chemist and druggists. Alfred Balkwill wrote in 1913 that after 1795 the concern was divided into separate wholesale and retail enterprises. As Dr. Selleck writes, "The clear assumption therefore is that the business ... had both a retail side supplying individual doctors or members of the public in the town, and a much larger wholesale sector supplying customers throughout the south west peninsula."
- Cookworthy's particular interests lay with chemistry and mineralogy. He committed his chemical experiences to a notebook and in letters to his friend the surgeon and apothecary, Hingston Fox of Penryn, referred to his work on furnaces in which he was able to obtain the very high temperatures necessary for his mineralogical experiments. This research was instrumental in his discoveries, firstly that china clay and china stone are essential to the production of true Chinese porcelain, and secondly, a method of manufacture. A.D.Selleck, Cookworthy, 1705-80, and his circle, Plymouth, Baron Jay, 1978 pp.31,37.

71. A. Raistrick, Quakers in science and industry, Newton Abbott, David & Charles, 2nd. edn., 1968, p.285.
72. Cripps, op.cit., pp.14,15.
73. Guildhall Library. The Woolmen's Company records. Court minutes, Ms. 6903/3, unpag.

The claim of freedom by right of patrimony refers to the fact that his father, Timothy, was a freeman of the Apothecaries' Company. The freedom of London was the important point and was the right by patrimony of all the legitimate children of London freemen. In those companies which did not operate strictly as craft gilds, (that is the majority; only the Apothecaries' and the stationers' and after 1745 the Surgeons', strictly enforced their rules of competency in their named craft) they admitted claimants in virtue of this right, even though the company was different from the parental one. See W.C. Hazlitt, The livery companies of the City of London, London, Swan, Sonnenschein & Co., 1892, p.76.
74. The Woolmen's Company court minutes, op.cit., 3 March 1800, unpag.
75. Ibid., 23 Jan. 1818. Susanna Woolley, widow, of Plough Court, Lombard St., was admitted by redemption on 23 April 1799. The record can be extended even further. William Phillips of Geroge Yard, Lombard Street, printer, son of James Phillips (W.L.) was admitted by patrimony on

11 August 1796. William's brother, Richard, the well known chemist and analyst, married an Ann Rickman, whose widowed mother on 6 August 1792 had been given the freedom of the same company by virtue of an order of the Court of Aldermen. The Friends seem to have had a particular affinity for the Woolmen's Company. Joseph Dimsdale of the Dimsdale family of inoculation fame was master twice and sat on parliamentary committees for the company.

76. Cripps, op.cit., p.22.
77. Chapman-Huston & Cripps, op.cit., p.51.
78. Ibid., p.52.
79. Ibid., p.116.
80. Inland Revenue apprenticeship records. I.R./1/33, f.189, apprentice Luke Howard, 7 years from 25 February 1788, premium £100.; I.R./1/35, f.^x15, July 1791, Thomas Dearman.; I.R./1/39, f.31, Joseph Gibbins. Ollive Sims' business evolved into J.C. Arnfield & Sons, which by 1947 had become a part of James Woolley, Sons & Co. of Manchester. See 'Father to son for five generations', Chem. & Drugg., 1947, 148:693.
81. D.Turner & L. Dillwyn, Botanists' guide through England and Wales, London, Philips & Fardon, 1805, 1:181-193, Derbyshire, O.Sims, passim, L. Howard, pp.185, 186, 190, 191, 192.

82. Chapman-Huston & Cripps, op.cit., p.55, 57, 60.
83. p.117.
84. Ibid., p.118.
85. Matthews, op.cit., p.221. Miall says that B.D.H. was formed from
 Davy, Hill & Co., (early 19th century),
 Hodgkinsons, Clarke & Ward (1762), Barron,
 Harveys & Co. (1762), Hearon, Squire & Francis
 (1714) and a combination of two old firms
 founded in 1760 and 1755. S. Miall,
 A history of the British chemical industry,
 London, Benn, 1931, p.136.
86. Apothecaries' Society court minutes. Ms. 8200/6, f.135r.
 3 January 1737. He gained his freedom on
 7 January 1745. Ms. 8200/7, f.1r.
 He took numerous apprentices and was on the
 Medical Register of 1779 as an apothecary. (p.34)
87. A.B. Allen, Eighteenth century England; the complete background book,
 London, Rockliffe, 1955. Costume: Section 6.
88. C. Townsend, 'Apothecaries, Druggists, and Pharmacists, Past, Present
 and Future', Pharm. Journ., 1870, 11:616.
89. L.B. Matthews, The antiques of perfume, London, G.Bell & Sons,
 1973, p.72.
90. John Bell, Hills and Lucas date back to the difficult beginnings of
 John Bell's pharmacy in Oxford Street, London
 in 1798, (Matthews, op.cit., p.220) whilst
 Evans Medical (now like Allen & Hanbury's and
 B.D.H. absorbed into Glaxo) can lay its
 origins at the door of Thomas Evans, grocer,

and John Evans, druggist, both of Worcester. Thomas had obtained his freedom as a grocer of that city on 14 November 1808, and set up in business on 15 December, apparently as a druggist, with his brother John. John did not obtain his freedom until 21 August of the following year when he was described as a druggist. Thomas was not closely associated with John who was joined by a younger brother, Edward, also a druggist. By 1818 John decided to shake off the provincial dust of Worcester and entered the large wholesale firm of Kempson, Yate & Co. of Snowhill, London. This partnership was broken in 1821 when John Evans formed the company of Stable, Evans & Co. with Daniel Stable. They traded from 62, Wood Street, off Cheapside. Both he and his partner travelled widely in a successful search for business, but the partnership was not entirely harmonious and was dissolved only two years after formation. John Evans then formed his own company and did not find a satisfactory partner until 1826 when Joseph Sidney Lescher, the son of a starch manufacturer, joined him. In 1833 the two partners decided to open a branch in the rapidly developing town of Liverpool, which was so conveniently situated for the importation

of crude drugs. Lescher and Evans' three sons, all of whom had been 'bred in the trade', set up the new business there. In 1840 the Liverpool firm became known as Evans, Sons & Co., and eventually the London one was re-styled Evans, Lescher & Webb. The two worked closely and harmoniously together and in due course became one of the largest manufacturers and wholesalers of pharmaceutical preparations in the country. See, 'The sesquicentenary of Evans Medical Ltd.', Pharm. Journ., 1959, 183:61. Thomas Kerfoot & Co., possibly the premier tablet makers in Britain, developed out of a pharmaceutical chemist's business in London Road, Manchester, established in 1797, and Willow Francis Ltd., claim that their beginnings are traceable to a wholesale druggist's business in High Holborn, London, which dates from 1751. See, Matthews, *op.cit.*, pp.229,234.

THE EXPERIMENTAL AND MANUFACTURING CHEMIST (d)

Chemistry as a science is its own right with its own individual approach to problems, its own technology and concepts, is a product of the scientific revolution. Any attempt to classify the sources which have led to both chemical theory and practice immediately becomes complex as discoveries in mineralogy or physics, in metallurgy or biology could have chemical significance. Even more obviously related are the developments of the new industrial technology, and more so still, those of medicine. A.R. Hall has written that, "By the end of the seventeenth century the best accounts of experimental chemistry were those written with medical applications in mind," adding that such chemical progress was due to "... physicians and apothecaries, among them Boerhaave, Cullen, Scheele and Black."¹ The teaching of chemistry began in the universities around 1700 but only as an adjunct to medicine and even at the end of century when Black was lecturing at Edinburgh the bulk of his listeners were medical students.

Although L.J. Rather has said that "It is fair to say that chemistry, in however rudimentary form, has always been included in the scope of European medical studies"² there is little doubt that the study of chemistry by medical practitioners gained its greatest impetus from the works of Paracelsus and his followers. Noah Biggs, English Paracelsian in 1651 called for a "Reformation of the Universities and the whole Landscap of-Physick" which would thus effect the discovery of the "Terra incognita of Chymistrie."³ The replacement of the humoral theory by the three principles, sulphur, salt and mercury was no advance in medical theory, nor was the esoteric Paracelsian and Helmontian philosophy in any degree helpful to the production of a sensible and effective medical rationale, but the iatrochemists did become active in two fields:

the promotion of chemically prepared medicines and the development of analysis in the investigation of mineral waters. As Franklin has pointed out with downright commonsense, "The physicians were at liberty to spin their webs of intuitive chemical thought, but for the apothecaries and druggists whose livelihood depended on their ability to market drugs, the improvement of chemical procedures had become a practical necessity."⁴

The Pharmacopoeia Londinensis of 1618 had 85 'Sales, Metallica and Mineralia', most of which were derived from Dioscorides, 20 'Olea Chymica' and 17 'Preparationes Chymica'. The situation had changed but little by the time of the pharmacopoeia of 1650 when the figures were 87, 22 and 21 respectively. The majority of the 'chemical oils' involved no chemical reaction but were simple distillates of crude substances, and many of the 'chemical preparations' were merely compounds which required no chemical procedures.⁵ As Trease has noted the early chemists, not understanding the true nature of chemistry, in fact produced many compounds which we would class as galenicals.⁶ Nevertheless impure preparations of mercurous chloride, potassium sulphate, antimony trichloride, potassium arsenate, potassium carbonate and the strong acids (hydrochloric, sulphuric and nitric) amongst others were known. Calomel was probably the first compound prepared artificially by what we today would recognise as a chemical process, that is double decomposition. It was manufactured in England in the early years of the seventeenth century and in 1630 Wolfgang Rumler, royal apothecary, was granted the monopoly of its manufacture. The process in this case is reported to have been fractional sublimation, repeated five or six times, of a mixture of mercury and corrosive sublimate. Besides the London Pharmacopoeia the maker of chemical remedies could turn to the

translations of John Hester, a chemist who dwelt on Paul's Wharf and died about 1593, and also to the works of the surgeon John Banister. By 1625 D. Gordon of Aberdeen, surgeon-apothecary, could list a large number of 'chymicall medicaments' which he made.⁷

Slow progress in chemical techniques was made in the later sixteenth and seventeenth centuries. Following the translation by Thomas Hill of Gesner's second part of his Treasure of Euonymous, (called in England The newe jewell of health), in 1576, the oak galls test used to identify both vitriol and alum, was known.⁸ Efforts were made to differentiate between limestone and plaster, salt and nitre, etc., the discolouration of silver by sulphur was used as an identifying test, and the use of crystal form for purposes of identification, first mooted by the Paduan anatomist and analyst Gabriel Fallopius (1523-63) was understood.⁹ Edward Jordon (1569-1632), M.D. of Padua, wrote an immediately popular paper on mineral waters in 1631, in which he indicated the value of crystallisation in purity tests, used both crystallisation and precipitation for purposes of isolation and made use of some vegetable pigments as indicators.¹⁰

The iatro-chemists and physicians received something of a rebuff with the Great Plague of 1665 when their much vaunted remedies proved as unavailing as those of the orthodox Galenists, but their reputation was not irretrievably damaged. Johann Rudolph Glauber (1604-70) iatrochemist and searcher for the philosopher's stone continued to be respected. He described for the first time the preparation of spirit of salt (hydrochloric acid), sodium sulphate (which came to be known as Glauber's Salts) and perhaps chlorine.¹¹ He was the first to make ammonium sulphate, and also distilled an ammoniacal liquor from bones, subsequently obtaining sal ammoniac or ammonium chloride from it by the

addition of salt sea water.¹² To add to his achievements he produced 'wood vinegar' or pyroligneous acid by the dry distillation of wood, a method which has been used commercially in later years.¹³ It is also apparent that he had an insight into certain chemical reactions, for example, double decomposition in which he employed the concept of chemical affinity.¹⁴

Advertisements such as that of Thomas Hammond's in 1685 were to be seen: " ... sundry select and experimental Medicines such whose Beneficence is well known to the most eminent Physicians, faithfully prepared and sold by Thomas Hammond, at his house, the sign of the Blew Balls in Ave-Mary Lane, leading from Lud Gate Street to Pater Noster Alley, who has been practically conversant as well as Student in Chymical Pharmacy (with submission to his other Avocations) above ten years past." His list of preparations included:-

i. "The Queen of Hungary's Water"

"Excellent for the gripes, admirable for the teeth and gums, and being excellent to beautify the skin, Ladies may mix a spoonful in four spoonfuls of bean-flower water or fair water (it will become slippery and as white as Milk) and wash their faces."

ii. "The English Orvietan or the curious purging antidote."

iii. "The Elixir propietatis, impregnated with volatile salt of Hartshorn, 2s. the ounce."

iv. "The Tincture of the Salt of Tartar (of a Rubicund colour)"

"Tis excellent against the green sickness in medicine."

v. "The ponderous Acid Oyle of Vitriol made Volatil and sweet."

vi. "Dullidge Water evaporated so as a Pint will Purge as much as three Quarts crude from the Well."¹⁵

A pharmaceutical chemist of greater fame was George Wilson, (1631-1711). Nothing is known of his origins but he was certainly well established at the sign of the 'Hermes Trismegistus', Watling Street in the parish of St Mary Aldermary by the time of the Great Plague, in which he was kept exceedingly busy. Unlike his friend George Starkey he succeeded in surviving. Starkey, the son of a clergyman in the Bermudas, graduated from Harvard Massachusetts in 1640, then on coming to London practised as a chemical physician. He became greatly interested in the new chemical remedies and won a high reputation for his 'extraordinary knowledge of chemistry'. Before his death he imparted the formula for his pill, the 'compound soap pill' which founds its way in to the London Pharmacopoeia of 1746. The 'soap' in both Starkey's pill and that of Matthews (to whom Starkey had sold an earlier variant) was composed of salt of tartar (potassium carbonate) and oil of turpentine, which was added as a corrective to the extract of opium.¹⁶

On 27 November 1668 Wilson received his freedom of the Company of Haberdashers by order of the Court of Aldermen. In his will he referred to himself as 'citizen and haberdasher'.¹⁷ He gave only five shillings each to his two grandsons Yelverton George and Robert Wilson, the sons of his late son Edward Wilson, as he had given " ... a large som and portion to his son whilst yet living." He bequeathed all his books, manuscripts and receipts, particularly the receipt of his Anti-rheumatick Tincture, together with the residue of his personal estate to his wife Mary.

About 1688 he moved to Well Yard, near St. Bartholomew's Hospital and there he wrote his Compleat Course of Chymistry, printed in 1691. It formed the basis of many public lectures from then until well into the eighteenth century.¹⁸ It was an eminently practical book and contained amongst others, sections on:-

- i. A list of the necessities for laboratory work.
- ii. Instructions of how "to defend a glass in a naked flame", that is directions of how to construct jackets of sand, pipe-clay, etc.
- iii. How "To fortifie cracked glass".
- iv. How "To lute Limbeckes".
- v. "Degrees of Fire".
- vi. "Terms used in Chymistry".
- vii. "Dr Willis his preparation of Steel".
- viii. A list of chemical symbols.
- ix. Dr. Starkey's Pill.
- x. Matthew's his pill.
- xi. Extract of opium.
- xii. Sugar, - an essential salt of a reed which grows in the East and West Indies.
- xiii. Extract of Peruvian Bark.
- xiv. Amber.
- xv. Preparations such as crocus metallorum and aurum potabile.

This book would seem to have been intended to help those who studied chemical processes under him. These courses were most successful and in 1694 he advertised them in John Houghton's weekly paper, A Collection for the improvement of husbandry and trade. The lectures and demonstrations were held in his house, a full course costing three guineas. Whether Wilson was the originator of this type of course in practical chemistry is not known but he was certainly a great populariser. Others who followed his example and methods were Edward Bright, a chemist with a laboratory in Whitefriars near Fleet Street, and William Johnson, at the sign of Van Helmont's Head in Fetter-lane; Johnson had been employed by Robert Boyle and had a knowledge of both physics and chemistry.

The Honourable Robert Boyle, physical chemist, stands squarely as the watershed of chemical thought and theory. Although dubbed 'the father of chemistry', John Freind in his chemical lectures in 1704 at Oxford was rather more correct when he commented that "he had not so much laid a new Foundation of Chymistry, as he had thrown down the old".¹⁹ His was the important task of clearing the ground of its wild, luxuriant growth and leaving it ready to accept more useful and fertile seeds.

In 1654 he went to Oxford and there lodged with Mr. Crosse, apothecary. To increase his proficiency in chemistry he brought over from Strasbourg in 1659 Peter Staehl to share his house, help in experiments and teach the budding science. Wood lists among Staehl's pupils Wallis, Wren, Lower, Ralph Bathurst and Thomas Millington, later John Locke joined the classes.²⁰ In 1660 Boyle published his New experiments physico-mechanical, touching the spring of the air ... The book was revolutionary in style, instead of beginning with long philosophical arguments it began with a detailed description of the air pump and the 43 experiments carried out with it. Pilkington writes that the book was " ... a model of Bacon's system of clear exposition, continual experiment, and careful deduction from the results, and it represented the first treatise written to illustrate the new inductive system by which causes and mechanisms were inferred from reliable practical evidence instead of being deduced by logic from accepted but unproven tenets of tradition."²¹ He demolished such beliefs as air being an essential element which could even penetrate solids, he threw doubts on fire being a basic element and showed that a vacuum could exist and that Nature did not abhor it to the extent that it allowed air to pass through glass. He proved that air had a weight and that the mercury in a barometric tube was held up by the weight of the air in the other arm of the tube, and beyond reaching to the top of the atmosphere.

He noted the necessity of air to the life of birds and mice and compared it with the extinction of a flame if deprived of the same substance. Even more challenging observations and conclusions were to be made in his 'The sceptical chymist' published the following year. He could not accept either the four-element system of the traditional scholastics or the three-principle notion of the Paracelsians and he delivered an attack from which neither ever really recovered. He developed a corpuscular, mechanistic hypothesis of matter, but never tried to further elaborate it into a system. Hall is of the view that although he is usually credited with taking the initial step towards the modern concept of the chemical element he was by his corpuscularian philosophy fundamentally prevented from doing this.²²

Corpuscularian ideas had a considerable vogue amongst English scientists. John Mayow doctor of civil law of Oxford in 1674 developed Robert Hooke's idea that combustible bodies were dissolved by a certain substance in the atmosphere. His belief was that the atmosphere consisted of a mass of air corpuscles, intermingled with which were others, which he called "nitro-aerial particles" because they were 'fixed' in nitre and nitric acid. He used these hypothetical particles to explain the corrosion of metals, the production of heat and flame with combustible bodies, to explain the phenomena of respiration and fermentation and even the flash of lightning. The physician John Freind, (1675-1728) M.D. of Oxford, attempted to link corpuscles and chemical affinity with the law of gravitational attraction, the fundamentals of which theory had already been briefly sketched out by Isaac Newton.²³ Not surprisingly he was regarded as being obscure.

Pilkington has pointed out that Boyle could with justice be regarded as a director of an extensive private institution.²⁴ Amongst

Lawrence Rooke (1622-1662, Gresham professor of astronomy and geometry), Robert Hooke, (1635-1703, Gresham professor of geometry,) Denis Papin (1647-1703, curator of experiments to the Royal Society), Frederick Slare, (1647-1727, the anti-dispensarian), Hugh Greg and Ambrose Godfrey Hanckwitz, of all these the last mentioned undoubtedly had the most direct effect on pharmacy.²⁵ Boyle moved from Oxford to London in 1668, the capital having by that time become the centre of scientific thought. He quickly took steps to set up new laboratories in Maiden Lane. The exact date of Hanckwitz's birth is unknown but the evidence points to it being 1660, consequently it is clearly impossible for him to have helped Boyle in the erection of his laboratory as is often suggested.²⁶ He was born in Nienburg, Germany and it is not known when he came to this country or how Boyle came to know him, but it is very likely to have been before 1683, the probable date of the birth of his eldest son, Boyle Godfrey Hanckwitz. Again what training Ambrose (I) had in chemistry is far from clear, although from his own testimony he served a Mr Steiger, chymist, when a young man.²⁷

Ambrose Hanckwitz's rise to fortune seems to have been due in the first place to the manufacture of glacial phosphorus. Tradition usually asserts that Hennig Brandt of Hamburg in about the year 1668 discovered how to isolate an impure phosphorus, a secret which he carefully guarded. In spite of this in September 1677 Dr. Johann Daniel Kraft demonstrated the newly discovered element to Boyle, and is also said to have given him hints as to the materials from which it was derived. By 1680 Boyle had devised a method employing urine but being dissatisfied with the yield he asked his laboratory assistant Bilger to find a more successful method. According to Joseph Ince the young Hanckwitz forestalled him in this.²⁸ Not only was the yield much improved but

the end product was far superior being white and solid and not a dark brown sticky mass.

Again just when Hanckwitz set up his own laboratory is unknown except that it was some time between 1683 and Boyle's death in 1691. Ince seems to suggest that the laboratory was on the same site as that of Boyle's but Maddison has proved this to be impossible, and shows that it was in the garden of his house in Southampton Street on the edge of the Bedford House gardens.²⁹ In any event it was soon one of the best equipped in England and became the resort of people of fashion as well as those with scientific leanings. Here he developed his 'fire annihilator' or 'water bomb' and conducted analyses of medicinal waters and earths; he also perfected a method of preparing sulphuric ether, a substance which had also been investigated by Robert Boyle. Hanckwitz and Johann Sigismund Frobenius demonstrated the properties of this liquid to the Royal Society in 1730. He found it useful in the cold extraction of essential oils.

Ambrose (I) died in 1741 and the business was continued by his second and third sons, Ambrose (II) and John, but they were far from successful; partly due to the money commitments their father had demanded from the business in his will and partly due to the incurable extravagances of John. In spite of a bankruptcy in 1746 the firm was allowed to work off its debts and in the next generation with Ambrose (III) rose to great heights again. After the death of the founder the character of the firm seems to have changed; it was still concerned with the manufacture of chemicals but it was also engaged in the preparation of the pharmaceutical products of the day. Ambrose (III) was apprenticed for eight years to James Burges, junior, citizen and apothecary on 1 July 1746 and took up his freedom thirteen years later in 1759.³⁰

John Conyers a London apothecary conducted some 'tryalls' on phosphorus which he recorded in his book of memoranda. It was his normal practice to make a careful note of the dates on which he carried out his experiments but on this occasion he unfortunately has not. In his book they lie between those of 3 October 1682 and 20 October 1690, and as he talks of using a small slice it would seem he had obtained his sample from Hanckwitz.

"Som tryalls Made upon phosphor described in Mr Boyles Booke (i) I tooke the shanke of veale bones & when I had scraped ofe the skinn & moysture I rubbed a small minute slice of the phosphor upon this bone w[i]th the handle of my knife which did not at all flame, but onely now & then smoke upon knocking & bending the bone. Secondly, I tooke oyle of Almonds & upon browne paper 3 double I dropped it & w[i]th a small quantity of phosphor rubbed w[i]th my knife handle thereon it scarce made show of so much as light or smoke, the same I did then trye w[i]th butter. 3ly I rubbed a small quantity w[i]th sale & saltarmonick w[hi]ch was not improoved therby, the same allso w[i]th flower of brimston. 4ly I tryed upon paper wett w[i]th oyle of vitriol and spirit of salt & found they extinguished it so th[at] little or no flame appeared, as allso w[i]th Sp: Corn: Cervi as little or less & so allso w[i]th water in like warmer wett upon browne paper, lastly I spread P. Aureos upon doubled browne paper & a minute slice of this rubbed there on fired verry feircely & speedier then anny of the other in so much th[at] it appeared to bee furious in its motion & speedily burnt my Ivory knife handle w[i]th much less rubbing. I tooke of salt^t peeter a little & rubbed it upon the bottom of the outside of a Gallypott & w[i]th a small mcdicu[m] of this phosphor quickly made an explosion like gunpowder."³¹

Our knowledge of the life and activities of the seventeenth and early eighteenth century apothecary is so slight that the memoranda of John Conyers, apothecary in Fleet Street, London, warrant a closer examination. He broke no new ground in scientific discovery, indeed many of his ideas are bizarre though with a certain curious logic behind them, but he tried to apply the methods of the new 'experimental philosophy'.

From his notes it is learnt that he was the son of Edward Conyers and his wife Jane Clarke who were married in 1632 or 1633 in the former church of St Faith's.³² He was apprenticed to Robert Phelps, citizen and apothecary and gained his freedom of the Company in February 1658. When he first became involved with the Royal Society is not known and he is often confused with William Conyers, M.D. of Oxford who died of the plague in London in 1665.³³ Although the relationship was of the remotest there is little doubt that the two families knew of each other. In 1672 the records relate that Mr. Hooke had produced a speaking trumpet which was found to be better than that designed by Mr. Conyers.³⁴ In 1679 and 1680 he was propounding mathematical problems which Mr. Hooke solved by means of Signor Viviani's book which had recently been sent to him.³⁵


Robert Hooke knew Conyers well and mentions him several times in his diary. "Wednesday, May 27th 1674. At Mr. Coniers, Apothecary in Fleet St. Saw some stones of his Collection and much Ebur Fossile. He gave me a peice."³⁶ On Thursday August 19, 1680 he wrote, "Conier, apothecary. At Jonathans with Coniers, Ashton and Dr. Wood." Conyers also published papers in the Philosophical Transactions on a pump and on hygrosopes.³⁷

In the second half of the seventeenth century a fresh investigation





began into the age-old enquiry concerning the relationship between weather and disease. Sydenham believed that the study of epidemic illness required a close observation of the weather, a study which was made easier by Boyle's experiments with barometers and other instruments including his 'statical hygroscope'. Christopher Wren urged the importance of the study of meteorology in relation to the incidence of disease in an address to the Royal Society and it is possible that Conyers heard him on the subject.³⁸ In March 1675 Conyers wrote

"Here you will find som[e] observations made touching the weather as to heat or cold, moisture & drouth which will be taken from glasses modified into Cylinders & Conexas



and from  all having 3fs of sponge put into each glass which varies their weight from tyme to tyme as the tyme of the yeare is ..."³⁹

He went on to relate that he had already kept a diary concerning the weather for a year and a quarter. These glasses he suspended in a cupboard with perforated base and sides which he nicknamed the "phenix nest."⁴⁰ He weighed them frequently and related their variations between each other to their differences in shape, which he thought might affect the gathering of moisture.⁴¹

He also made instruments which he sometimes called thermometers and sometimes thermoscopes. One he designated by the figure () , another he filled with almond oil () a third with spirits of wine () and yet another with a 'green water' made from "vinegar maydew, Roman vitriol and verdigrease in common water" ()⁴² They were all calibrated and he took great pains to ascertain at what number they were standing, and under what conditions, speculating as to why they should differ. One of his greatest problems was that he had far too many variables at any one time, for him to come to any use conclusions.

In common with other investigators of the period it was almost impossible for him to know what the weather was even a mere twenty miles away at a time when he was making his observations. On 19 March 1675 he noted that in London there had been no snow to mention yet a 'passenger' from Hertfordshire told him that it had been falling there in great flakes.⁴³

In August 1679 he began a series of observations using a catgut hygroscope made by a Mr John Sponge some twelve years earlier. He was disturbed to find that it and his own wooden one made from a deal board moved in a quite contrary fashion to each other. This he attributed to inertia on the part of the catgut it having " ... gotten another temper ..." with being used to a higher air three storeys up, - "Heights of Ayre gives [sic] different temper of moisture to bodyes, the higher the region of Ayre the dryer."⁴⁴

He related the weather conditions to the state of health and on one occasion gives a particularly dramatic example. On 24 March 1675 he noticed a sultriness in the atmosphere with a curious " ... smoakynes & a due or moisture cleaving to the paste & painted boarded entryes ...", the smoky and sulphurous reek continued for an hour or so and the unusual warmth for longer, " ... which proved fatall for about 10 of the clock that night my verry good friend Dr Jonathan Goddard reader of the Physick [who] lectures at Gresham colledg, he was taken ill & sodainly fell downe dead in the street as he was entering into a coach, he being pretty Corpulent & tall man, a Bachelour of about 5 & fifty yeares age & Mellancholly & inclineing to be Cynick who used now & then to complain of giddynes in his head; he was an excellent mathematician & phisician, somtymes to Oliver the Protector; his disease thought Apoplectick."⁴⁵

John Conyers was convinced that the earth shrank and swelled " ... one [sic] the superficies at least, in like manner as the wo [o] den Pannel of Deale with an Index."⁴⁶

He listed 27 observations which he thought proved his belief, or which at least showed a similar shrinking and swelling. He noticed that the activities of his sponge glasses, thermoscopes, baroscope and his deal board could be paralleled with such occurrences as the lowness of springs in dry weather. He was aware of the phenomena of magnetism, electricity, evaporation, absorption, expansion and fermentation but explained them all in terms of 'rarifaction and condensation'. In observation No.24 he wrote of an experiment in which a tightly stoppered empty bottle was lowered to such a depth in the sea that it shattered. This he believed was due not to "pressure as Mr B. would have it ..." but to "... the ayre therin shrinking untill it drawed in the sydes."⁴⁷

He was well aware of the new theory of "the pressure of the atmosphere which is now strongly maintained by all the world" but was doubtful of its validity.⁴⁸ He carried out a number of experiments which he thought 'rebuked' the theory but his results were much confused by the phenomena of capillarity and surface tension. Rather later he adduced a further argument against "... the pressure of the atmosphere ..." but in this case was blinded by the differing viscosities, coefficients of expansions and specific weights of his almond oil and green water.⁴⁹

He was unable to define 'heat' and 'cold' believing them to be two distinct but opposed manifestations or 'qualities' as he termed them.⁵⁰ His ingenuity in argument can be seen in his explanation of the earth's revolution. He believed that 'condensation' was caused by cold which resulted in moisture being raised from the interior of the earth, from as great a depth as the most powerful pumps could reach. 'Relaxation' was brought about by the heat of the sun, or at least a "... farther approach ..." was prevented by "... the force of the heat", which had the effect of causing the 'cold' at the remotest point from the 'heat' to condense and

raised water. The upper layers of the globe being thus made heavier on that side caused the earth to move from west to east by the weight of liquid 'overpoising' and thus the " ... the motion of the earth once every 24 hours.⁵¹

His work as a pharmacist was of ever present interest to him. In his memoranda he refers to the making of extract rudii and from it draws inferences in relation to combustion;⁵² the manufacture of aloes of roses gives him the opportunity to discuss the question of the dispersal of solids in liquids and the entrapping of air,⁵³ whilst the preparation of lac. virginis allows him to suggest the method by which fossils were formed.⁵⁴ In this last case a pound weight of litharge was added to $3\frac{1}{2}$ lbs of white wine vinegar, the resulting fluid being reduced by boiling to $2\frac{1}{2}$ lbs, this was then mixed with a solution of ten ounces of alum in $4\frac{1}{2}$ lbs of water. On this occasion a creamy (instead of a milky) substance had formed from which a large number of crystals soon separated. He had no idea that a chemical reaction had taken place but tried to explain it by saying that 'coagulation or petrification' had occurred in order " ... to preserve the select species of each specific petrifying body ..." when a mixture is made. The impression is of considerable confusion of mind.

He also made notes on other subjects such as the tanning of leather or drew outsize hailstones but his keenest interest aside from physical chemistry, was archaeology, about which he wrote at length.⁵⁵ Living so near to the cathedral of St. Paul's and having such an enquiring mind it is not surprising that he often visited the workmen at the time of its re-building. The discovery of Roman coins, Roman brick and pottery interested him greatly. He noted Samian ware which he described as being " ... a sort of redd earthen pot sheards, the pot as redd and firme as sealing wax and upon som of the Pott or Cupp bottoms inscriptions

some upon cupps to drinke others upon dishes like sallet dishes but cunningly devised & wrought ...". He recognised as well Castor ware, "and here and there greyhounds & staggs & hares all in raise work," and that termed by archaeologists poppy beakers which he described as being " ... potts like broken urns which were curiously layed one [sic] the outside with like Thorne pricks of rosetrees & in the manner of raised work, this upon potts of Murry collour ...".⁵⁶ He well understood the value of strata and wrote, "I might see the Epochs or beginnings of things and in these various heighths of ground poynt & shew with my finger the Romans concernes lay deepest, then higher those of more recent or fresher concerne."⁵⁷ He had a great respect for Roman workmanship. "Now it doth appear the Romans hadd excellent mechanicks vizt. pottmakers & stamps of coyne yea & they had excellent workers in glass for amongst these Roman Potts was found glass beads as bigg as Coale [to] be put on you little finger & these hollow within & of blew glass & wrought or enamelled with yellow glass, and blew beads of a Collour of the Turkois stone ...".⁵⁸ Although he was by no means an expert draughtsman, he attempted to draw the different types of Roman pottery and even a Roman kiln, in order to illustrate his notes.⁵⁹

It was probably the abundance of interesting material from below the foundations of St. Paul's which started him on his museum. He wrote in his Memoranda, " ... & amongst the rest great Pinns made of bone or Ivory the heads of many like the great brass pinn, others vermiculated or skrew heads, others like the popes tripple crowne & yet long before his mitter was publick, of these a large sort fell to my share, as many as a pint pott would hold."⁶⁰ The man obviously had the makings of a good archacologist and as Oakley has pointed out he appears to have recognised that the hand-axe was a primitive form of tool. "About 1690

a London pharmacist named Conyers found a pointed piece of flint close to the bones of an elephant unearthed in the gravels near Grays Inn Lane. He evidently recognised that this specimen was possibly an implement or weapon, for he preserved it, and a quarter of a century later an antiquary, John Bagford, illustrated and described it ..."⁶¹

He was in close contact with the enquiring and 'curious' persons of his day. He refers often to Doctor Francis Glisson, the Regius Professor of Physick, who lived nearly, and no wonder, because Glisson was Conyers' wife's uncle. Indeed from Glisson's will it is apparent that John Conyers had borrowed £80 from him and when the will was made in 1674 had not as yet paid it back.⁶² Other well known acquaintances were Mr Tompion, the watch-maker, who had his deal hygroscope for a while, and Mr Flamstead the astronomer who " ... resolved to make one of my weather-gages mentioned before, vizt. of deale Pannells with a crack in them to show moysture & drouth alteracon."⁶³

John Conyers ideas on physical science were woefully confused, but he was aware of the recent developments, even if he did not agree with them or fully understand them. He did, however, manfully try to implement the ideas of the 'new' philosophy by conducting experiments and trying to evaluate their results. His profession not only allowed but actually encouraged him in his studies, and was a continual stimulus to his fertile and ingenious if somewhat wayward brain.

Other stimuli to the study of chemistry should not be forgotten, stimuli which resulted from what Bernal terms, 'the marriage of the craftsman to the scholar'. As early as 1560 Vannoccio Biringuccio's (1480-1539) work De la pirotechnia, was published, in which were described the metal, glass-working and 'chemical' industries.⁶⁴ It was followed six years

later by Georg Bauer or Agricola's De re metallica which has been described as 'probably the finest technical treatise ever written'; it dealt not only with minerals and metals but also the practice and even the economics of mining.⁶⁵ The relationship between chemistry and mining was put very clearly when von Leibnitz (1646-1716) wrote, "Germans have always excelled in mining, Germany should therefore become the mother of chemistry."⁶⁶

Chemical techniques, particularly large scale processes, were developed by the trial and error methods of such old industries as soap boiling and salt manufacture. Like other London guilds that of the Salters had to contend with the problems which arose when the Crown awarded patents of monopoly. In 1611 Sir George Bruce obtained a patent for the manufacture of white salt to supply Lynn, Boston and Kingston-upon-Hull on better terms than former holders; he claimed that he employed over a thousand hands in the business.⁶⁷ Until 1670 salt was made in this country either by evaporation of sea water, in which case it was called bay-salt, or by the evaporation of brine from the salt pits of Worcestershire and Cheshire. Boring for coal was being carried out near Northwich in 1670 when a substance as 'hard as Allom' was found which proved to be rock salt. A vein 25 feet thick had been found and so put an end to any further shortages.⁶⁸ Liverpool merchants engaged in the export of refined salt built the Mersey salt refineries in the 1690's.⁶⁹ The salters were also interested in saltpetre production a substance which was of even greater interest to the Crown as it was an essential ingredient of gunpowder.

Saltpetre production demanded a tedious and careful procedure which is set out with variants in great detail in many 'firework' books. It was leached out of the nitrogenous earth of stables, dove-houses, pig-styes,

slaughter-houses and even the floors of dwelling houses. Vats were filled with this saltpetre-earth alternately layered with wood-ash and lime through which water was allowed to trickle. The resulting solution was concentrated by boiling, a little lye with alum being added. Common salt was an impurity but crystallised out from the boiling solution. The saltpetre water was then allowed to cool whereupon the saltpetre formed on the surface 'like frozen ice'.⁷⁰

In 1625 Sir John Brook and Thomas Russel were given a patent for obtaining saltpetre for gunpowder manufacture from animal excrement. In spite of Brook and Russel's new invention it soon became apparent that they were unable to supply more than one-third of the country's needs, especially in wartime, so a proclamation was set forth which empowered his majesty's saltpetre-makers to collect the animal fluids (which were ordered to be preserved) from house to house once in 24 hours in summer and once in 48 in winter. Not only was this assistance demanded but all soils throughout the kingdom which were impregnated with animal matter were claimed by the Crown for this purpose and the saltpetre makers were empowered to dig up the floors of all dove houses, stables, cellars, slaughter houses, etc. for this purpose. It was not until 1656 that an Act was passed forbidding such manufacturers to dig in houses and enclosed land without the leave of the owners.⁷¹

Singer states that "Alum is historically important as the first substance deliberately prepared in what the modern chemist would regard as a substantially pure state." Alum was used as a mordant and it was found that if it could be freed from contaminating iron salts then it was far more effective. Since the salts were coloured and alum is exceptionally easy to crystallize it was soon found that repeated crystallization readily eliminated the contaminating iron.⁷²

Alum was made in Yorkshire, the Isle of Wight and Dorset in the sixteenth century.⁷³ James Benson obtained a patent for the manufacture of alum, and in 1660 A relation of James Benson's undertaking the allum at the allum works, in Lancashire, was published.⁷⁴

Soap was not made in this country until perhaps the fourteenth century and then only in very small quantities. In 1622 James I is reported to have granted a monopoly to a company to make 3,000 tons of soap a year for a yearly sum of £20,000.⁷⁵ Both London and Bristol became centres of soap manufacture; certainly apprenticeships to 'sope-boilers' were very common in the inland revenue apprenticeship records for eighteenth century Bristol. Another craft which was prevalent in Bristol and which gradually improved its crude and empiric techniques was that of the sugar baker or sugar refiner.

The key to further expansion in the glass and soap industries, as well as certain sections of the textile trade, was the increased production of sulphuric acid. Drebbel made it in England in 1720 and Joshua "Spot" Ward at Richmond in 1736 was preparing sulphuric acid by a process based on the method developed by Libavius in 1595. He burnt sulphur with nitre in large glass vessels of fifty gallons capacity until the acid content of the liquid was strong enough for concentration in glass retorts. This process was much cheaper than that of lixiviation of pyrites.⁷⁶ The costs were still further reduced by John Roebuck when he substituted lead chambers for glass vessels in 1746 at Birmingham. Three years later he and a businessman, Samuel Garbett, extended their operations to a large works at Prestonpans, where the acid production was particularly useful to the bleachers of linen.

Roebuck came of a Sheffield family with a grandfather who was a button-maker and a father who was a successful cutler turned factor and

merchant. He was born in that town in 1718, educated at the grammar school and Dr. Dodderidge's academy at Northampton. From there he went to Edinburgh, obtained his medical diploma, and then went on to Leyden. He set up in practice in Birmingham in 1743 where he was highly successful. He became ever more interested in chemistry and carried out early experiments in a small laboratory behind his house which led to important advances in the current methods of refining gold and silver; he evolved also processes for making mercuric chloride and liquid ammonia. He and Garbett established a chemical works and a refinery, and because sulphuric acid is essential for the recovery of the fine metals from waste gilt and plated metal, became interested in the manufacture of that acid.⁷⁷ Both at Prestonpans and Birmingham the manufacture of acid continued in increasing quantities behind high walls and in great secrecy, but as is usual secrets will out. In about 1756 or so a Mr. Skey of Bewdley began sulphuric acid manufacture using even larger lead chambers. As is also usual the initiation into the secrets is said to be due to one or more disgruntled workmen.

Experimental science, of which chemistry was a part, gained immensely from contact with art, mining and the skilled handicrafts. As Clarke has noted the diaries and correspondence of the scientists is full of their visits to workshops, of their talks with artificers and descriptions of industrial processes, and he quotes Boyle as saying, "In many cases a trade differs from an experiment, not so much in the nature of the thing, as in its having had the luck to be applied to human uses, ..." ⁷⁸

The apothecaries would seem to have contributed little to that group of men who were experimental chemists with a leaning towards chemical theory; in manufacture the story is rather more positive. They were

certainly engaged on the small scale production of lac sulphuris or milk of sulphur in the 1630's because that substance became the central point of a furious quarrel between the apothecaries and physicians of London at that time. In the early seventeenth century there were three methods of production known of which two, those of Oswald Croll and Josephus Quercetanus (Du Chesne), were the most commonly used, with the apothecaries having a greater preference for the latter. Owing to the fact that the flowers of sulphur used in its preparation was not infrequently contaminated with arsenic, and that the vessels were often of iron rather than glass or earthenware, so that ferric chloride or ferrous sulphate were produced on acidification and precipitation, serious intestinal disturbances were common after administration of lac sulphuris. It is apparent that the apothecaries were well aware that problems could and did arise but of course had no idea as to their chemical and physiological causes.⁷⁹

James Goodwin, referred to in the Annals of the College of Physicians as "Chymist and Apothecary at the end of the Hay Market" is known to have manufactured sal ammoniac and probably also sal volatile and ammonium carbonate.⁸⁰ It is related in Bell and Redwood that because of a controversy between Goodwin and two apothecaries called Markham and Matthews, and a physician Dr. Levit, respecting a much prized contract for drugs with the Royal African Company, the College of Physicians was actually encouraged by the Society of Apothecaries to present the act of 1724. One of Goodwin's shops was 'searched' by the Censors on 10 June 1724 under this Act and a large amount of his stock which they thought to be 'corrupt' was burnt before his door. The newspapers of 13, 14, 15 and 16 June reported the searches being conducted in the shops of the apothecaries and chemists and druggists, but only one name was

named, and that was of James Goodwin.⁸¹ He remonstrated with the College and five of his preparations were again examined there, whereupon they were once more condemned. The five products in question were diascordium, melilot plaster, oxycroceum plaster, hiera picra and pil. Ruffi., all of which are in fact galenicals.⁸² In spite of promises another act of retaliation occurred two days later. It is noticeable that the Apothecaries' Society's minutes fail to record this incident, nor did the Society come to his aid, but there was no reason why they should do so, as he was not a member, even though he termed himself an 'Chimist and apothecary'.⁸³ It would seem that here we can hear the muted tones of the apothecaries endeavouring to quell the chemists and druggists and the illegal practice of unincorporated apothecaries, in which they hoped to enlist the aid of the College of Physicians.

An article in the Chemist & druggist of 1926 points out that in the mid-eighteenth century the titles 'chemist and apothecary', 'druggist and apothecary' and 'chemist and druggist and apothecary' were not uncommon, and cites examples from newspapers of 1722, 1728, 1766 and 1783.⁸⁴ The writer quotes from Defoe's The complete English tradesman, (1726, 1:45) in which he wrote, "I have seen ... an apothecary turn chymist, and not a few turn physicians ... " and maintains that in the fifty years 1731-80 the number of chemist or druggist and apothecaries was nearly equal to the figure for chemist and druggists. As examples of chemists and apothecaries he names James Goodwin, whose troubles ended in bankruptcy in 1738, J. Juniper and T. Greenough. The author believed that the chemist came increasingly to dominate the scene, aided by the fact that " ... in many cases he and his laboratory - an obvious commercial asset - and in some he had his fellowship of the Royal Society or his course

of lectures to enhance his prestige." In confirmation of his views he refers to the writer of "The present ill state ..." (1702, p.31) who was of the opinion that 'chymists' were ousting apothecaries in what he terms the apothecaries' art, " ... the apothecaries have been so intent upon practice that for many years they have wholly quitted chymistry, which requires strict attendance, and will not admit of one minutes neglect ...". This however should probably be interpreted as a reference to the manufacture of galenicals and the sale of drugs, as much as to the manufacture of chemicals.

The very successful activities of the Society of Apothecaries' own laboratory should not be forgotten. The College of Physicians had established a laboratory in about 1650 under a chemist called William Johnson. Johnson was a victim of the plague in 1665 and the laboratory with the rest of the College buildings was destroyed in the fire of the following year. Thereafter their interest seemed to die as had the petition of Chymical Physicians who wanted a separate college to represent their interests.⁸⁵ The apothecaries' seeing a good opportunity in 1671 invited freemen of their company to finance an elaboratory for the manufacture and sale of chemical medicines. The inaugural meeting of subscribers was held 4 January 1672. The preamble to the rules stated that the Society had " ... bene publicquely traduced by the Pseudo Chimists of these tymes for their ignorance in the Spargirick part of Pharmacie ... and in order to vindicate themselves they intended to start manufacturing these preparations.⁸⁶ The first operator was Samuel Stringer but his conditions of employment were so poor that he left a year later, to be followed by Samuel Hull. Hull died in November 1675 and his apprentice Samuel Symonds was appointed as a temporary measure.

The laboratory seems to have really got into its stride with the

appointment of a German in 1676, Nicholas Staphorst,⁸⁷ production increased and the following year he was in trouble for allowing sulphur fumes to be emitted from the kitchen chimney.⁸⁸ Sales were made to physicians, surgeons, apothecaries and druggists in the London area and the venture became so successful that shares were limited to £25 per member.⁸⁹

An idea of the size of the Society's manufacturing operations which includes those of a chemical nature can be gained from the questions put to the master and wardens by the commissioners of the army Medical Board in 1810. It was indicated that medicines could be provided for an army of 30,000 men over the course of ten days if the emergency were great. They divulged that the average amount spent by the Royal Navy for medicines for the five previous years was £24,917 per annum, and the figure for the East India Company, whom they also supplied was £21,582.⁹⁰

As has been already noted (p.170) there was no clear cut dividing line between the titles of 'chemist' and 'druggist', but the development of both would seem to have been at first confined to London and its suburbs. The first evidence of chemists and of druggists found outside the capital and Oxford, was in the South-West. In 1685 John Nicholson was termed by the town authorities of Bristol a 'chimis', whilst Exeter had several druggists from at least 1711 onwards.⁹¹ The inland revenue apprenticeship records show that a 'chemist etc.' had appeared in Gainsborough by the 1740's, and druggists and 'druggist etc's' at Gatehead, Birmingham, Chester, Nottingham, Halifax and Reading. Thereafter they proliferated at an amazing rate in both London and the provinces, particularly in the rapidly developing towns of Sheffield, Hull, Birmingham, Manchester, Coventry, etc. Probably typical of them was John Mander of Wolverhampton.

He was born in July 1754 and founded his factory in King Street in

1773, so that he was unlikely to have had either an extensive education or a long apprenticeship. He produced chemicals, including calomel and other mercurials for the London market and was so successful as to find it necessary to build new and larger workshops and warehouses in 1790. Just at this time he became the apprentice master of Christopher Wood and William Parkes; they paid £105 for a seven year apprenticeship. A partner, William Bacon, providentially a wealthy business man, also joined him at this period. More property was bought ten years later and in 1803 John Weaver joined Mander and Bacon. In the nineteenth century they became suppliers of graduated pill tiles and also of an unusual cup for the administration of effervescent powders. The firm was still in existence in 1955.⁹²

Notes and references.

1. A.R.Hall, The scientific revolution, 1500-1800, London, Longmans, 1962, p.320.
2. L.J. Rather, "Pathology at mid-century", in A.G. Debus (editor), Medicine in seventeenth century England, London, University of California, 1974, p.74.
3. A.G. Debus, "Paracelsian medicine: Noah Biggs and the problem of medical reform" in Medicine in seventeenth century England, op.cit., p.36.
4. A.W. Franklin, "Clinical medicine" in Medicine in seventeenth century England, op.cit., p.125.
5. A.G. Debus, The English Paracelsians, London, Oldbourne Press, 1965, p.153.
6. G.E. Trease, Pharmacy in history, London, Bailliere, Tindall & Co., 1964, p.111.
7. Debus (1965), op.cit., p.154.
8. Ibid., p.161.
9. Ibid., pp.161,159.
10. Ibid., pp.162,163.
11. Hall; op.cit., p.319.
12. J. Grier, A history of pharmacy, London, Pharmaceutical Press, 1937, pp. 176, 174.
13. Ibid., p.180.
14. Hall, op.cit., p.319.
15. British Library. Advertisement of Thomas Hammond. B.L. reference; 546.d.44(11)
16. F.W. Gibbs, 'George Wilson, (1631-1711)', Endeavour, 1953, 12:183.

17. Public Record Office. P.C.C., Prob.11 522 f.177. August 1711.
18. Gibbs, op.cit., p.182.
19. Franklin, op.cit., p.127.
20. H.M. Sinclair, "Oxford medicine", in Medicine in seventeenth century England, op.cit., p.389.
21. R. Pilkington, Robert Boyle, father of chemistry, London, Murray, 1959, p.145.
22. Hall, op.cit., p.324.
23. Ibid., pp.327, 328.
24. Pilkington, op.cit., p.132.
25. R.E.W. Maddison, 'Studies in the life of Robert Boyle. F.R.S.' Part V., Notes and Records Roy. Soc. Lond., 1953, 10:159-187, See, p.159.
26. Ibid., The Hanckwitz family pedigree, p.162.
27. Maddison, op.cit., p.161.
28. J. Ince, 'The old firm of Godfrey', Pharm. Journ., 1896, 56:167.
29. Maddison, op.cit., p.178.
30. The Apothecaries' Society court minutes. Ms. 8200/7, f.5r., in which he is described as the " ... son of Boyle Godfrey of the parish of St. Paul, Covent Garden, chemist"; f.143v., 3 July 1759, there is no explanation as to why he waited five years before he claimed his freedom.
31. The British Library. Sloane Mss., Ms. 958, f.139r. Memoranda of John Conyers.
32. Conyers, op.cit., f.127r.
33. Foster, Alumni Oxoniensis, Oxford, University Press, 1:318.; Public Record Office, P.C.C., Prob. 11 319 f.20. The will was made 29 August 1665

and was the following February. He was the son of William of Walthamstow.

34. R.T. Gunther, Early science in Oxford, Printed for the subscribers,
7:403; 4:85. Conyers paper on his ear
trumpet was published in the Philosophical
Transactions of the Royal Society.
35. Ibid., 7:538.
36. W.H. Robinson & W.A. Adams (editors), The diary of Robert Hooke,
London, Taylor & Francis, 1935, p.105.
37. The Philosophical Transactions of the Royal Society, XII:888,
1027; XI:715.
38. J.H. Cassedy, "Medicine and the rise of statistics", in
Medicine in seventeenth century England,
op.cit., p.303.
39. Conyers, op.cit., f.114r.
40. Ibid., f.114v.
41. Ibid., f.116r, f.118r.
42. Ibid., f.114v.
43. Ibid., f.117r.
44. Ibid., f.131r.
45. Ibid., f.118v.
46. Ibid., f.112r. Observations listed on f.112r to f.113v.
47. Ibid., f.113v.
48. Ibid., f.110r.
49. Ibid., f.115r.
50. Ibid., f.117v.
51. Ibid., f.130r.
52. Ibid., f.113r.

53. Ibid., f.134r.
54. Ibid., ff.135r.,v.
55. Ibid., ff.131v,132r.
56. Ibid., f.105v.
57. Ibid., f.109r.
58. Ibid., f.109r.
59. Ibid., ff.107r,106v.
60. Ibid., f.109r.
61. K.P. Oakley, Man the tool-maker, London, British Museum, 1963, p.3.
62. Public Record Office. P.C.C. Prob.11 355 f.116. November 1677.
63. Conyers, op.cit., ff.124v,121r.
64. J.D. Bernal, Science in history, Harmondsworth, Penguin Books,
1969, 2:388.
65. Ibid., p.388.
66. Ibid., p.675.
67. W.C. Hazlitt, The livery companies of the City of London, London,
Swan Sonnenschein & Co., 1892, p.294.
68. G.T. Warner, Landmarks in English industrial history, London
& Glasgow, Blackie, 1934 reprint, p.192.
69. M.W. Flinn, An economic and social history of Britain, 1066-1939,
London, Macmillan, 1972 reprint, p.139.
70. C. Singer, E.J. Holmyard, A.R.Hall and T.I. Williams, A history
of technology, Oxford, Clarendon Press,
7 vols. 1954-78, 2:380-1.
71. A.W. Sheldrick, 'The dovehouses of Hertfordshire and the
saltpetre industry', Hertfordshire countryside,
1970, 24:28-9.

72. Singer et al., op.cit., p.369.
73. S. Miall, A history of the British chemical industry, London,
E. Benn, 1931, p.119.
74. Hazlitt, op.cit., p.195.
75. Grier, op.cit., p.178.
76. Ibid., p.164; Robert Dossie credited the process to
Cornelius Drebbel; both he and
Gabriel Jars give a detailed description.
Dossie (1717-1777) had been trained in
pharmacy and became particularly interested
in industrial chemistry; he wrote
Elaboratory laid open, or the secrets of
modern chemistry and pharmacy revealed,
published 1758. See M. Schofield,
'The versatile Robert Dossie', Pharm. Journ.;
1967, 199:406-7.
77. R.E. Wilson, A history of the Sheffield Smelting Company Ltd.,
1760-1960, London, E.Benn, 1960, pp. 5,6 and
appendix.
78. G.N. Clarke, 'Aspects of science in the age of Newton',
Econ. Hist., 1937, 3:362-79, see p.371.
79. C. Wall, H.C. Cameron & E.A. Underwood, A history of the Worshipful
Society of Apothecaries of London, Oxford,
University Press, 1963, 1:266-82, 291-4.
80. Grier, op.cit., p.143.
81. J. Bell & T. Redwood, Historical sketch of the progress of pharmacy
in Britain, London, Pharmaceutical Society
of Great Britain, 1880, pp. 21,23.

82. Cameron, op.cit., pp.416-7.
83. The Inland Revenue apprenticeship records, I.R./1/1, f.^x110,
June 1712. James Goodwin of St. Martin-in-the-Fields, 'chimist and apothecary' took as apprentice Guy Stone the son of a citizen and cutler.
84. 'The title of chemist and druggist', Chem. & Drugg., 1926,
105:90-100. See p.99.
85. Cameron, op.cit., p.149.
86. Ibid., p.149.
87. Ibid., p.152. He was the translator of L. Rauwolff's Itinerary.
See E. Lankester (editor), The correspondence of John Ray ..., London, The Ray Society, 1848,
pp.255,262, 25 October 1692, 10 April 1693.
His son of the same name collected shells and plants in India for James Petiver. See
the Sloane Mss., Ms.4063, f.51. 7 November 1700.
88. Cameron, op.cit., p.151.
89. Trease, op.cit., p.142.
90. The Guildhall library. Records of the Apothecaries' Society.
Ms. 8200/10, 1810, 'Negotiations between the commissioners of the army medical board and the master and wardens of the company of apothecaries', f.152 et seq.
91. Inland Revenue apprenticeship records, I.R./1/42-46. January 1711
to February 1721.

92. W.A. Jackson, 'Antiques of Mander, Weaver and Co., Wolverhampton',
Pharm. Hist. 8:3:unpag. It is suggested
Mander attended Wolverhampton Grammar School
which had a fine reputation at that time under
the headship of Dr. William Robertson.
John Abernethy the surgeon (born 1764) was
at the school from 1773-78. See
J.L. Thornton, John Abernethy, privately
printed, 1953, p.15.

CHAPTER II

'JOB-DESCRIPTION'

The exact 'job-description' of the English apothecary has been the subject of much discussion and informed speculation. The most general belief is that in the mediaeval period he was a preparer and purveyor of drugs, and that he did not prescribe or directly participate in the patient's treatment;¹ by the late seventeenth century he wandered increasingly into the attractive fields of medical practice, something that was given legal sanction with the Rose case of 1703, until by the end of that century and the Apothecaries' Act of 1815 he was recognised to be a doctor. This gradual evolution was at no time uncomplicated and at no period can be neatly categorised. The subject is particularly clouded by the fact that the capital city has been throughout English history by far the largest city in England. This has led to major differences between the organisations and institutions set up in the provinces and those in London. No other city could or did in the seventeenth century support three separate bodies covering medical treatment, the physicians, the barber-surgeons and the apothecaries. In London their spheres of interest were defined, and although each encroached on the others' province with greater or lesser degrees of impunity, limits were set up and definitions were made. In the provinces this was not so, nor was it feasible.

Both D'Arcy Power and Rolleston have claimed that the mediaeval apothecary, besides being a seller of simples and preparer of compounds, was also a prescriber and medical attendant.² Both cite the case of Coursus de Gangeland but the award of a pension may well have been for duties beyond those usually demanded of him. Possibly he had administered clysters, a task considered beneath a physician. Certainly in later

centuries this was one of the apothecary's functions and was possibly so in the Middle Ages.³ John Ardern in his treatise on anal fistulae, haemorrhoids and exemas boasted that he had often been successful in cases of colic and constipation where Lombards had used clysters unavailingly. Trease has pointed out that many Italians in London in the mid-fourteenth century were apothecaries.⁴ Nevertheless it is unlikely that apothecaries of the royal retinue often carried out these duties as both the king and queen had their royal physicians and surgeons.

From the royal household accounts it can be seen that apothecaries could supply either the royal medicine cupboard directly or else via the physician. The records of the Duchy of Lancaster relate that in October 1395 William Chicheley supplied the future Henry IV with "divers medicines ... by order of Master John Malvers, medicus," and in the same year £1.11s.10d was paid "To William Chichele, the grocer, for medicines bought by order of his physician John Malver."

Two years later the Chicheles supplied a plaster to ease the royal back.⁵ The term 'grocer' had by this time largely superseded the earlier ones of pepperer or spicer. John Chicheley, grocer, supplied in the year 1407-8 20 lbs of 'coton apt', and, William, 306 lbs. of 'cer.polen'.⁶

On the other hand John Carp, Keeper of the King's Wardrobe, paid Master John de Middleton the king's physician £15.1s.4d., £10.8s. of which was said to have been paid to John Waddesworth, apothecary of London, and £4.13s.4d to John Salmon, apothecary of the same place, "for providing spices and electuary for the King's body, as for bottles, electrines, phials and other necessary things belonging to his profession." in the same way Middleton had dealt with the required medicines for the treatment of Henry's 'pokkes' when he was twenty.⁷

This is the expected pattern of a great and complex household, particularly in London, but an entirely different picture can be obtained if the attention is transferred to a distant part of the kingdom, even though it be an important and relatively large city.

In 1433 the prior of Gisborough and one of his canons, Brother Richard Ayreton, demanded £40 damages from Matthew Rillesford, leech of York, for malpractice in the treatment of Richard's leg. On 14 September the three men put the two sides of the case before a certain Robert Belton of York, an apothecary. Belton's decision was that during the following eight days Rillesford was to apply his treatment to Brother Richard's leg under Belton's own supervision, and that the two clerics were to drop their action against the leech for negligence prior to 14 September. The plaintiffs were not satisfied with the arbitration and the case went before a jury.⁸ The final outcome is not related but it is clear that in this instance an apothecary was regarded as being of sufficient status and of sufficient medical experience to arbitrate, or at least attempt to arbitrate, in a case of alleged medical incompetence. The wording of the leech's denial of negligence makes it plain that it was not just a case of the external application of salves but also of the administration of internal medicines.

Two hundred years later in the city of Exeter a famous passage of arms took place. In that diocese, which covered Devon and Cornwall, in the years between 1568 and 1640, there were issued 81 licences for surgery, 12 for medicine and surgery, and 13 for medicine alone; in Exeter at one particular time there were four physicians besides two Spanish doctors. John Woolton, M.D. of Oxford and son of a former bishop was the leading doctor until his headlong collision with an apothecary called Thomas Edwards, which led to his downfall.

Thomas Edwards had been apprenticed to a local apothecary, then went for a time to Oxford and later worked for one of the Spaniards, Dr. Francis Brynæ. In the 1590's he was practising medicine and was highly regarded by the local gentry. His success aroused Woolton's jealousy. He wrote Edwards an abusive letter at Christmas 1603 in which he said, "Mr. Trivett, your master, taught you not to go beyond your mortar and pestle ... You ought not to administer so much as a clyster or open a vein without licence of a physician," and ended by telling Edwards to burn his prescriptions and use the ashes, "which you, I know, can do, being a perfect Paracelsian." Obviously Woolton was a Galenist. Edwards brought a case against the physician which dragged on for three and a half years. Edwards' apprentice testified that his master was successful with the use of mercury and the local gentry spoke up on his behalf, the final outcome being that Lord Chief Justice Coke fined Woolton £500, gave Edwards £170 damages and ordered the physician to stand in the market place at the next Exeter assizes with twelve feet of interrogatories about his neck, in the meantime he was to be kept in prison. Afterwards he retired to his estate in north Devon.⁹

The result is not so surprising when it is considered that in the years 1512-54 twenty prosecutions for contravening the act of 1511 were brought outside London, of these at least five were against apothecaries, and in none of them was the prosecution successful.¹⁰ Increasingly the apothecary along with the surgeon was being legally recognised as a general practitioner. William Dove, apothecary of Exeter, was licensed to practise medicine and in 1580, the two apothecaries, John Swayton of Faversham and Anthony Salter of Exeter, for the practice of surgery in 1598 and 1622 respectively, and just to show that Edwards really had won his case, his apprentice Thomas Flay

received his licence for medicine in 1628, and Edward's son-in-law nine years later. As Roberts has noted between 1634 and 1637 many apothecaries were similarly licensed in the small towns in Berkshire, Herefordshire, Kent, Northamptonshire, Suffolk and Surrey.¹¹

Dr. Rook, on the basis of a detailed analysis of the medical scene for the town of Cambridge in the period 1558-1642, claims " ... that the rigid tripartite division of medical activities described by so many historians, though it may well have prevailed in London, was not a conspicuous feature of medical life in Cambridge" during those years. " ... It is apparent that in the 16th and 17th centuries almost all medical men whether they were by training physicians, surgeons or apothecaries, were in effect general practitioners. It may have been true, as was apparently the case in London, that the richer patients tended in the first instance to consult a physician and the poor an apothecary, but even this is questionable since many of the apothecaries were men of great reputation." He concluded by suggesting " ... that economic factors, imposed by the limited size of the population, resulted in different methods of practice and different professional relationship from those which are said to have been customary in London."¹²

The difference between the great metropolis and the country may have been less than is supposed.

The Acts of 1540 led the College of Physicians to instruct a barber-surgeon to proceed against an apothecary and four surgeon-physicians who were all practising medicine.¹³ Roberts in his study of medical practice in London has shown that by the 1590's the College was using its disciplinary powers with great vigour against general practice surgeons, and to a lesser extent against apothecaries, who had not taken up the new Paracelsian medicine with the enthusiasm of the surgeons,

but that after the early years of the seventeenth century the picture changed. The importation of exotic drugs increased very quickly and with that the apothecary gained position, greater wealth and power. In the 1620's the apothecaries began to challenge the right of the physicians to control not only their practice of medicine and pharmacy but the interference with their economic freedom.¹⁴ As has been related (p.56.) the battle between apothecaries and physicians came to a head in 1634 with the latter determined to proceed against the apothecaries' charter by means of a 'Quo Warranto'; in their brief they outlined a number of grievances. The third one accused the apothecaries of practising medicine and specifically named John Buggs, George Haughton and Richard Edwards. There is no doubt that such well known men as John Reeve, apothecary and medical adviser to the Earl of Exeter, Thomas Johnson the botanist and the detested Nicholas Culpeper all practised medicine.¹⁵

The apothecaries certainly made their point quite clear with the occurrence of the Great Plague in 1665 that, they had in future to be accepted as doctors, though there is little doubt that they had been well established before this time, otherwise it is difficult to see why Nathaniel Upton, apothecary, should have been appointed master of the City pest house in Finsbury fields.¹⁶ That there were before 1665 two types of London apothecary is made clear by William Boghurst, the apothecary who did such yeoman service during the epidemic. He wrote, "But those apothecaries which have their work and dependence from the physitian are not, I think, obliged to stay behind when their Masters lead the way: for who shall direct them? They say it is not our business to direct or undertake to give Physick of our own heads; therefore they are to be excused. . But those Apothecaries which stand

upon their own legs, and live by their own practice, are bound by their undertakings to stay and help as in other diseases."¹⁷

Wall has written, "It is clear from literature of the period [the last quarter of the eighteenth century] that the ordinary surgeon could not make a living if he confined his activities to the treatment of external diseases and accidents. He was compelled to keep a shop and to sell drugs, and to practise midwifery though at the best his training had been in anatomy alone."¹⁸

Surgeon's shops are known in earlier periods too. James Yonge wrote in his Journal in 1693, "The beginning of this year I had prepared to send my son John to Leydon to travel and study" but now that John's fortnight old secret marriage had been discovered, "I stopt his voyage to Holland and put them to live at the dock, fornisht his shop, gave him some money and all the profits of the place, which was a good £100, besides practice."¹⁹

The inventory of James Condliff, surgeon of Tideswell, Derbyshire, who died in 1753 shows that his utensils and drugs in his shop were valued at £10.²⁰ Others had different side lines such as Robert Murrell of Enfield who leased the Greyhound inn and owned a small brewery,²¹ or William Fuller of Hemel Hempstead, who was not only a surgeon and apothecary but as his inventory made in 1671 shows, sold, "Raisins, currans, salt, starch and all other Grocery commodities with boxes, bagges etc.," and also established the Bell in Market Street where he brewed his own beer and sold wine and cider.²²

The apothecaries were in no better case. Like Wall, Cameron has pointed out that few apothecaries could live by only dispensing the complicated remedies prescribed by the physician.²³ John Fage, apothecary of Cambridge, who died in 1694, was also described as a vintner. The rating lists of Great St. Mary's show that he became the occupier

of the Rose inn in 1679, the year he married the widow Lellis Spencer.²⁴

Most apothecaries indulged in the practice of medicine to a greater or lesser degree and the crux of the matter is how much of an apothecary's income derived from an open shop, and how much from medicine.

Trease has shown that an examination of apothecaries' inventories can throw considerable light on English pharmacy.²⁵ It can be determined from them which groceries, sweetmeats or medical lines they sold in their shops, what apparatus they had, how large was their house, the value of their furnishing and apparel and whether they were flourishing or on the verge of insolvency. Robert Baskerville of Exeter whose will was proved in 1596 died worth £324.11s.6d of which the total for the shop was £97.7s.11d.²⁶ Amongst these goods was "A case of instruments, 20s.", presumably surgical instruments. Richard Beresford of Lincoln's inventory dates from 1607. He was not quite so wealthy as Baskerville being assessed at £295. Amongst his tobacco, packthread and groceries such as 2 lbs of 'Marmelate', there were a brass syringe, five glister pipes and urinals, so may be he administered enemas.²⁷ At a later date (1655) there is the inventory of John Parker, apothecary of Lichfield, which the appraisers did not finish entirely; even though the figure stood at £228.11s.6d it did not include the furniture which was known to have been in the house in 1648. Beyond the fact that he had three chests of groceries, sweetmeats, mithradate, pills, chemical oils and urinals little can be told of his practice. In the window of his shop he had as trade sign the figure of a naked boy which was valued at one pound sterling.²⁸ Another Lichfield apothecary, Samuel Newbould, who died eleven years later, was much less wealthy (his total estate came only to £74) but his inventory gives his drugs and implements in great detail and include, '1 glister pott.'²⁹

Thomas Needham's of Chesterfield inventory made in the same year as Parker's (1666), is nineteen pages long. The commodities in the shop were valued at £120.8s.9d. Besides the numerous vegetable drugs, the chemicals such as vermilion, copperas, white lead and crude antimony, the confectionary which included candied ginger, elicampane, comfits, marchpane and 'makeroons', a large quantity of tobacco and some medicaments of animal origin, he had a considerable amount of apparatus. He possessed two stills, one of pewter and one of lead, a large grater, four funnels, two hammers, mortars and pestles, crucibles, four iron skillets and one of brass, eight pairs of scissors, scales and weights and a scale beam, a three-bit gimblet, a press for oil and a tobacco knife and press. He had also significantly leeches, two lancets with case, six urinals, four dozen and three clyster pipes and two breast glasses. Like Parker he had a fair quantity of gunpowder, besides 2 lbs. of bullets and a pair of bullet moulds.³⁰

From these inventories the impression is gained that apothecaries in the seventeenth century were comfortably off. Of the ones given by Trease for the years 1603-1660, the total assessments were, Robert Blease of Chester £361, Ralph Clark of Grantham £490, Richard Beresford of Lincoln £295, Mark Fenn and William Evans of the same city £132 and £76 respectively, and Thomas Blackman of Horncastle and Francis Chipsham of Bourne with a mere £51 and £7. The later figures for 1660-1714 are, Henry Mawe of Epworth £31, Richard Cotterall of Alford £63, William Leese and Nicholas Ellis both of Stamford with £103 and £122, Andrew Broome of Grantham £314 and John Inkersall of Boston with £1,140. Inkersall, living in a busy port, was probably an importer of drugs and acted as a wholesale druggist as well as apothecary.³¹ Like other wealthy tradesmen and merchants of the period, as banking was

still in its infancy, apothecaries often acted as financial middlemen.³²

By the post Restoration period merchants had become familiar with the use of bills of exchange and used them for raising money. Some who wished to lend money for a short period would even buy them, but if the transactions did not proceed smoothly then great difficulty might be experienced in recovering the cash. A safer vehicle and one which was for the longer period of six months to a year was the bond; in this case the penalties against the defaulter were more severe and far more enforceable. Better still was the pledge, in which case the lender would become the owner of the borrower's land or jewels which had been used as security. After the 1640's mortgages became commoner as the penalty of immediate foreclosure was no longer invoked if the defaulter could prove that he could make regular and sizeable interest payments.³³ These early bankers were recruited from a number of trades and professions, the commonest being the scriveners and goldsmiths.³⁴

The goods and wares in the shop of Richard Kerwood, apothecary of Bristol whose inventory was taken 16 March 1693 amounted to £55 out of his estate of £316.9s. He had £101 in ready money but the next biggest item was:- "One mortgage of a house in Ballance Streete in Bristoll of one John Tugwell - £70". There was also the matter of a "debt due by Mr. Danyell Phillips by bond - £12."³⁵

William Bossley of Bakewell was even more involved in financial transactions. His total estate according to the appraisers on 28 December 1714 was £396.3s. of which £80 was accounted for by, "In the shop: Counters boxes bottles potts drawers druggs and all materialls for or belonging to his trade there or elsewhere", but his money out on loan was considerably more.

"Oweing upon bond by Mr John Roe of Smaldale	£120
Oweing upon bond by Michael Marshall of Tydswell	£20
Oweing by Henry Goodwyne & Tho. Goodwyn of Ashford	£10
Oweing by Francis Beighton of Sheldon upon bond	£20
Oweing by Robert Bagshawe of Flagg upon bond	£10
Oweing by Geo. Goodwyn of Moniash upon a note	£10
Oweing by Wm. Boam of Moniash upon bond	£9
Oweing by Tho. Johnson of Baslow upon bond	£10" ³⁶

A successor of William Bossley's at Bakewell, John Denman, although less wealthy, (he was worth £188.15s.) still had £80 in "Money due upon Bonds and Book Debts" as compared with £60 for drugs and medicine in the shop.³⁷ From where this money out on loan originated is but rarely indicated, possibly it was from a trade surplus or possibly it was money deposited with them. The appraisers usually grouped all debts together using some phrase such as 'Debts due and owing to the deceased at the time of his death, some of which are sperate and others desperate' as in the case of Thomas Bromfeild, druggist, who died in 1721; Bromfeild also had £70.10s due 'from Thomas Clondon by Bond' and '20 shares of welsh Copper.'³⁸ The debts of the deceased are but rarely noted by the valuers and usually only occur when there is some doubt as to whether the estate will cover all the bequests. It is unusual to find one such as that of Lemuel Leppington, citizen and salter, drysalter of Bread St. in the parish of Allhallows, London, whose inventory was made in November 1715. After his household goods had been assessed at £282, the debts owed to the testator were listed. These were divided into 'Debts on bond with interest' which amounted to £588 and included £135 which was out on interest to the 'note of hand with interest' of Henry Monger; next a long list of good debts in trade

owing was made, then one of doubtful debts and finally one of bad debts. The very last section of all dealt with debts which the testator owed, which included two sums of money at interest to two aunts.³⁹

Many apothecaries must have had other interests but it is usual to hear of only those which were outstandingly successful or challenging, for example the activities of William Cookworthy of Devon the originator of the manufacture of porcelain in this country. Commoner, certainly in the country, were those with farming interests. William Bossley, mentioned above, had a horse and a cow with calf but these represent no more than business and family requirements. It is known from the letters of George Crabbe that his first apprenticemaster, a Mr. Smith of Wickhambrook, was also a farmer and as much income was derived from his land as from his struggling practice. The young Crabbe had not only to share his attic room with the plough boy but help with his duties too.⁴⁰ John Longworthy, practitioner in physic and surgery, who died in West Wratting, Cambridgeshire, in 1685 was also something of a small farmer. He had a closet for drugs and surgical instruments, and his "Instruments and utensils for physic and surgery, 2 stills, 1 mortar and a few old books" amounted to £4. On the other hand he had five cows, two horses, bullocks, hogs and poultry and $2\frac{1}{2}$ loads of wheat in the granary all of which accounted for £65 of his total estate of £121.⁴¹

Philip George has very effectively used the inventory of Henry Hayes surgeon of Wisbech (died 1702) to make a comparison with the pharmaceutical practice of Jeremy Cliff, apothecary of Tenterden in 1721.⁴² Dr. Palmer noted in his article on Cambridgeshire doctors that Hayes had a surprising variety of drugs considering that he was not an apothecary.⁴³ As might be expected there was a preponderance of unguenta

and emplastra, but there were too, prepared and compounded preparations such as electuaries, emetics, opiates and treacle water which belong more to the realm of the physician or apothecary than the surgeon. There is no doubt that he was administering internal medicines, possibly to prepare a patient for an operation or else post-operatively, but just as likely as a 'practitioner in physic.'

It is known from Jeremy Cliff himself that he was not only a compounder of physic but practised as a doctor as well. On the fly-leaf of his well thumbed pharmacopoeia of 1721 he copied out the, "Orders to be observed in the Workhouse in Tenterden in the County of Kent ... and by the officers concerned in it," adding at the end "These Orders were made in the Spring in 1724, But no Phisition settled to the House of the Poor of the Parish of Tenderden till the Vestry Chose me this present year 1726 at Easter last past, Being Apr: the 10th: of a Sunday ... "

The old bills of surgeon or apothecary give an indication of what proportion of clysters, plasters or ointments were prescribed or dispensed but as only general terms such as 'Elect. Febrifug.' or 'Pulv. Diaphoret' were as a rule used, it is not clear of what the clysters, purges, boluses and vomits were composed. Even if it is known that the patient had received Venice turpentine or diapente or ung. Basilicon there is no guarantee that the apothecary had made it himself. He may have bought it from a firm of druggist/apothecaries such as Estwick and Coningsby, or from another apothecary as several did from Thomas Bott of Coventry, or as was very likely in the London area, from the laboratory of the Apothecaries' Society. The mysticism which still surrounded the preparation of Theriaca Londimensis with its 65 ingredients, (4 of them compound ones) until the time of Heberden, must have encouraged many to buy from the London company. Its

preparation was jealously guarded by the Society and any infringement of this privilege was sure to rouse its ire.⁴⁴

George has come to the conclusion however that Jeremy Cliff in contrast to Henry Hayes made even the most complicated preparations. His annotated 1721 pharmacopoeia indicates that he prepared at least 87 of the possible 464 preparations including Theriac. Andromach. and Theriac. Londinen. The emphasis was on simple ointments, plasters, electuaries, waters and distilled spirits; chemical preparations were noticeable by their almost complete absence. On the other hand George has estimated from Hayes' inventory that it would have been impossible for him to have compounded himself the more complex recipes. Hayes made considerable use of chemical drugs. George suggests that the surgeons were less conservative than the physicians and apothecaries in the adoption of the new chemicals for internal use, partly because they were more used to employing them in their ointments and plasters, and partly because it was their usual practice to buy their compounds, not from apothecaries, but from chemists and druggists who were less influenced by the galenical tradition.

None of these inventories and bills sent to patients really solves the problem of exactly defining the apothecary's practice, for this his business records such as day books, letter books, and sales and purchases ledgers are required, and they have but rarely survived.

The daily cash book for the years 1706 and 1707 of a Shrewsbury apothecary have been found in the loft of premises now occupied (1956) by Edwin Murrell Ltd., seed merchants of that town. The entries record cash received for goods sold over the counter on that day or in payment of accounts. It is apparent that this unnamed apothecary had a very brisk counter-prescribing practice in which he sold gargles, draughts, mixtures, conserves,

lohochs, liniments and ointments etc. Some of these no doubt were dispensed on the orders of the two doctors, Dr Bennion and Dr Gyles who were amongst his customers. He sold patent medicines such as 'scots pills' (9d a box) and 'sylverlocks pills' (8 for 4d), oils, both volatile and fixed, gums and resins, cochineal, isinglass, spermaceti and musk. As with the retail pharmacist of today he had a ready sale for spices and soap, and ol. lavand which borders on perfumery as well as sago an invalid food. In the way of surgery he carried out phlebotomies which varied in price from 6d to 2s.6d. As to whether 'pul. stenutator', of which he sold considerable quantities, should be regarded as being for medical or pleasurable purposes it is hard to say.

There were regular entries for chemicals, for example, saltpetre, arsenic, borax, vitriol, white and red lead, and for the metals gold and silver which were sold by the leaf or the shell. The sale of pigments was also important to him, ivory black, vermilion, carmine, lake, umber, and Dutch pink, together with the necessary brushes and crucibles, varnish and pencils.⁴⁵

On the evidence of the cash book, the Shrewsbury apothecary sold a fair range of goods, was a busy counter-prescriber and dispenser and performed phlebotomies, but it does not give any information as to whether he left his shop to visit patients at their homes or accompanied doctors on their rounds; with Thomas Bott of Coventry more information can be gathered.

Thomas' father Septimus had also been an apothecary in Coventry but of his practice we have no knowledge. Septimus died in 1702 leaving his apothecarial business to his son who has left his records from July 1711 to March 1734, and which include a day book and an

account book. Thomas Bott was by no means a cash chemist and had a large number of account clients who could run up horrifying bills. The Right Honorable William Bromley Esq. owed £7.13s.4½d composed of £2.19s.4½d. for medicines and £4.14s. for the house between July 4th. and September 7th. 1711; in the same year from July 2nd. to October 2nd. the Right Honorable The Lord Craven of Comb had £5.19s.2d. of goods and medicines, and another £2.11s. "Since my Lord's Death, Oct. 25 - March 21". All accounts must have been satisfactorily concluded as Bott continued to have the custom of the great house at Comb and the next Lord Craven ran up a bill of £69.12s.1½d. by the end of September 1724.⁴⁶ His accountancy consisted of writing each day in the day book the articles which were bought by each customer and then these were gathered together under the debtor's name in the account book; when the account was settled it was boldly crossed through, and another started a few pages further on. Simple but effective book-keeping.

Bott supplied a greater quantity of groceries than did the Shrewsbury man, 'currans', raisins, starch, coffee, candied orange and lemon, jam and Naples biscuits figured largely in his accounts. He sold spices, mace, pepper, ginger, and the Bromley household was in receipt of large quantities of dried herbs for example "Avens, Bettony, Scabious, Burnet, mugwort, feverfew, motherwort, Tormentil, pimpermell, agrimony, vervain sage, Angellica, Rue āā lb.i".

Medicines also played an important part, electuaries, vomits, potions, purges, powders, drops and enemas; occasionally in the day book the whole formula is given as with Mr Grove, junior, on 16 June, 1733,

"℞ Calomel ℥ss Cons: Cynosbat: q.s: f: bolus Mane Sumend:
cum Potion. Sequent. ℞ Mannae Opt: ℥i solve in Aq: Lactis ℥ii
filtra et adde Syr: despin: Cerv: Rosar: Solut. āā ss Sal:

Glauberi 3i Aq: Mirabilis 3 ss M: f: potio."

He certainly practised as a surgeon as well as apothecary.

The day book records for 26 November 1733, "Mr Waren. Curing yr: Hand Head and attendance", which the account book relates was charged at 5s. The cost of a tooth drawing was 12d and a phlebotomy the same sum. Lord Craven appears to have been afflicted with a condition of the leg which required considerable treatment.

" August & September 1720	5 Visits to yr. Lordship, lay at Comb one Night.
Apr. 1722	3 visits to Mr. Craven & phleb.
May 1722	3 visits to Mr. Craven
July 1722	2 Visits to yr. Lordship to dress yr. leg for the Gout.
Jan. 1723	3 Visits to yr. Lordship to dress yr. leg for the Gout.
June 1725	1 Visit to your Lordship.

All left at pleasure."

At the end of his account book Thomas Bott wrote the names and addresses of two of his druggist suppliers; one was William Towle in Clements Lane, Lombard St., London and the other John Kempson of Snowhill. It is possible that he acted in a small way as a wholesaler himself as his books show that he supplied a number of apothecaries. Mr. Barber, apothecary, had from 1711 to 1713 fennel, colocynth, caraway seeds, juniper berries, ivory shavings, Virginia serpentary roots, sal. martis., rice, vitriol, mint water and tamarinds. Others were Messrs. Cleve, Remington, Keeling, Poole and Morton, the last having 12 ozs. of mithradate in 1736.

Thomas Bott's accountancy is not always absolutely clear, it seems strange that he should have supplied Mr Bromley of Baginton with

quires of writing paper, or even more unusually six pigeons which cost 12d. in August and twelve herrings in the following November (6d.), or stranger still that Mr Denham should be charged 2s for the making of a bed gown and another 2s for a blue damask gown. Nevertheless every detail was noted. Each load of coal from John Stafford was entered and his asses, which presumably were kept for their milk, cost him a shilling a week at Ned Stafford's. He had also a mare which would be necessary for visiting my Lord Comb and other patients. She went into Mr. Hall's grounds for Lammas 1731 to the Michaelmas following for 10s., but he had the misfortune to have to pay 12d for a trespass, and even more to the chamberlain and pinlock, which probably decided him to remove the mare to a more expensive but safer place.

Geographically his trade covered a surprisingly wide area. He supplied or treated people as far away as Kenilworth and Stoneleigh, Atherstone, Griff and Dunchurch; farthest away of all was Rowland Berkeley, Esq. in Worcestershire and his relations the Armesteads in Yorkshire.⁴⁷ Certainly the impression is gained from these account books that Thomas Bott had a busy shop with a wide range of groceries and drugs and a flourishing medical practice as well.

Not far away in the Midlands, at Stafford, there was at this period another father and son apothecarial practice, that of Thomas and Lewis Dickinson. In the William Salt library, Stafford there are two accounts books, dating 1707-22 and 1736-55 respectively; at one time believed to have belonged to one man it has now been established that the earlier belonged to Thomas who died in 1721 and the later to his elder son Lewis, born about 1714 and dying in 1775.

Thomas Dickenson's accounts show that, like Thomas Bott, he had a large number of account customers although bills do not seem to have been

allowed to run on for such long periods. He supplied the usual confections, juleps, draughts, spirits, electuaries and mixtures, olive oil, huge quantities of manna, cream of tartar, smelling salts and cinnamon water. His groceries were very much less, mostly tea, coffee, sago and sugar candy, also saltpetre, bay salt and sal prunella which were probably used as food preservatives. His medical practice was busy; he bled patients, dressed their arms, prescribed two plaisters for Mrs. Hicks' breasts and charged Mr. Benjamin Cotton of Littywood 2s6d for "Dressings for Sally's leg and making an issue," he applied formentations and probably administered enemas. He certainly charged 1s.6d for an enema, but also supplied 'arm'd pipes' presumably for self or home administration, which must also be deduced from the frequent entries of 'Incred. pro Enem. 6d."

The account book of Lewis did not greatly differ, he still supplied treacle water and diacodium, flower of brimsdown (sic), boxes of pills, aethips. mineral., opeldeldoc, small glyster pipes at 6d., styptics and mixtures 'for a Glyster'. Groceries were however noticeably less, primarily sago and barley sugar which can be regarded as invalid foods.⁴⁸

Lewis had a brother who was a grocer in Worcester and it is interesting to compare his account book of 1740-50 with those of his brother and father.⁴⁹

Young Thomas sold as would be expected several varieties of tea, Bohea, Hyson, fine, green, grocers, and a type known as 'gunpowder', coffee cocoa, chocolate and sugar, including lump, Lisbon, powder, bastard, loaf, Jamaica and brown. From letters sent to him one learns he was regarded as a good judge of hops, for the sale of which Worcester was well known; tobacco, raisons, currants, Jordan almonds, jam, candied lemon, pepper, cloves, tracle, soap, lamp black, nuts, starch and a stick of red wax all figure in his account book. The only truly pharmaceutical

products are possibly brimstone, and certainly, ague powders. As far as the two Dickenson brothers were concerned the split between apothecary and grocer was complete. How far this applied to the whole country is as yet unknown. The day book of Maximilian Grindon of Olney (died July 1784) and the accounts ledger of his son George who practised into the nineteenth century have a completely medical bias, unless the sale of three lemons and twelve grains of cochineal to Mr. John Higgins in 1789 can be regarded as evidence of a lingering interest in the sale of groceries. The two doctors sold their patients blisters, pills, balsams and mixtures, charged up to 2s.6d for a journey, and also sold simple druggist lines such as creta precip. and Glauber's salts.⁵⁰ George, and probably his father too, were doctors to the poor of the parishes of Emberton and Yardley.

The material examined is far too slight for anything more than a tentative conclusion, but on the face of it, it seems that by the end of the first three-quarters of the eighteenth century the provincial apothecary at least had completely divorced himself from the sale of household commodities, whether for the bathroom, kitchen or first-aid cupboard. He was however still a dispenser of medicines prescribed by himself, he charged for his journies but not his advice and also sold 'chemists' sundries', for example glyster pipes and dressings. He may or may not have had an 'open shop' with heavy counter-prescribing.⁵¹ His medical practice was mixed and comprised that of surgeon, physician and midwife, by 1775, to set arbitrarily a date, the general practitioner, as understood to exist in the first half of this century, had arrived.

Notes and references.

1. G.E. Trease, Pharmacy in history, London, Baillière, Tindall & Cox, 1964, pp. 31,70.
2. D'Arcy Power, 'English medicine and surgery in the fourteenth century', Selected Writings, 1877-1930, Oxford, Clarendon Press, 1931, pp.29-47, See p.43.;
H. Rolleston, 'History of medicine in the city of London', Annals. Med. Hist., 1941, 3rd series, 3:1-17, see p.3.
3. The British Library, The gentleman apothecary: being a late and true story turned out of French, London, for H. Brome, 1670. B.L. reference 1081.1.2.
4. Trease, op.cit., p.64.
5. J.H. Wylie, History of England under Henry IV, London, Longmans & Co., 1884-98, 4:152-3, 159, 176.
6. Ibid., p.204.
7. Ibid., p.158. In 1394 the apothecary was also treating Henry's leopard which he had brought back from Cyprus the previous year.
8. W. Baildon, 'Notes on the religious and secular houses of Yorkshire', Yorks. Arch. Soc. Records, 1895, 17:78.
In 1435 Robert Belton was involved in a case of debt in which he was referred to as a 'citizen and spicer of York'. Ibid., p.44.
9. R.S. Roberts, 'The personnel and practice of medicine in Tudor and Stuart England', Part I, The provinces, Med. Hist., 1962, 6:363-382, See p.371-4.

10. Ibid., p.368.
11. Ibid., p.369.
12. A.Rook and M.Newbold, 'Physicians, surgeons and apothecaries in Elizabethan and Stuart Cambridge', unpublished paper read before the British Society for the History of Pharmacy conference at Cambridge in 1974.
13. R.S. Roberts, op.cit., Part II, London, Med. Hist., 1964, pp.217-229, see p.223.
14. Ibid., pp.226,227.
15. C.Wall, H.C.Cameron, & E.A.Underwood, A history of the Worshipful Society of Apothecaries of London, Oxford, University Press, 1963, 1:283,301,43,44.
16. T.D.Whittet, The apothecaries in the Great Plague of London, 1665, Epsom, A.E.Morgan Publications, p.24.
17. Ibid., p.21.
18. C.Wall, The history of the Surgeons Company, 1745-1800, London, Hutchinsons' Scientific & Technical publications, 1937, p.90.
19. F.N.L. Poynter (editor), The journal of James Yonge, 1647-1721, London, Longmans, 1963, p.205.
20. Lichfield Record Office. James' Condliff, inventory, 1753.
21. Enfield parochial charities minutes. In the custody of D.H. Holliday, 10, Russell Road., Enfield. Middx; Guildhall Library, Commissary Court Wills. Ms. 9168/36. Proved 6 March 1733.

22. A.L.Wood, 'Hemel Hempstead and its people during the seventeenth and eighteenth centuries', in Susan Yaxley (editor), History of Hemel Hempstead, Borough of Hemel Hempstead, 1973, pp.80-1.
23. Cameron, op.cit., p.42.
24. T.D.Whittet & M.Newbold, 'Apothecaries in the diary of Samuel Newton', Pharm. Journ., 1978, 221:118.
25. Trease, op.cit., p.126.
26. M.Rowe & G.Trease, 'Thomas Baskerville, Elizabethan apothecary of Exeter', Trans. Brit. Soc. Hist. Pharm., 1972, 1:3-28.
27. Trease, op.cit., p.127.
28. D.G. Vaisey (editor), 'Probate inventories of Lichfield and district, 1568-1680', Collections for a history of Staffordshire, 4th series, Staffordshire Record Society, 1969, 5:99-102.
29. Ibid., pp.156-161.
30. Lichfield Record Office. Thomas Needham, inventory, 1666.
31. Trease, op.cit., pp.127,143.
32. G.Trease, 'Manufacture of apothecaries' tokens', Pharm. Journ., 1966, 197:323-4. " ... others have noted that before the days of banks, it was not unusual for apothecaries to undertake banking ... Three loans of 1647, made by Richard [Wood] I ... were for sums of £140, £124 and £48, and ... one of 1653 made by Edward [Wood] I was for £300." Two years later Richard obtained the smelting mill at Dickfield Bridge for £100.

33. C.Wilson, England's apprenticeship, 1603-1763, London, Longmans, 1971, pp.209,155.
34. Ibid., p.155.
35. Bristol Archives Office. Richard Kerwood, inventory, 1693.
36. Lichfield Record Office. William Bossley, inventory, 1714.
37. Lichfield Record Office, John Denman, inventory, 1753.
38. Public Record Office. Inventories, Prob.3 20/206.
39. Guildhall Library. Skilbeck Brothers business records, Ms.10857.
40. P.Lewis, 'An Aldeburgh apothecary', Hist. of Med., 1971, 3:2:23.
41. W.M.Palmer, 'Cambridgeshire doctors in olden time', Proc. Cambs. Antig. Soc. 1911, 15:200-79, See p.218.
42. P.George, 'A Wisbech chyrurgion', Chem. & Drugg., 1955, 163:713-5;
P. George, 'Jeremy Cliff', Chem. & Drugg., 1954, 162:211-3.
As George has pointed out Jeremiah Cliff appears to have had two sons, Jeremiah and Edward; a Jeremiah Cliff, either the father or the son, took Thomas Paine as an apprentice in 1748 when he was termed 'surgeon etc.'. See Inland Revenue apprenticeship records, I.R./1/18, f^x147, November 1748.
43. Palmer, op.cit., p.219.
44. Apothecaries' Society court minutes, Ms. 8200/2, f.21. "24 February 1681. The master informs that a drugster sells Mithradate and Diascordium, and that one in Smithfield makes them for him."
45. 'An apothecary's cash book', M.& B.Pharm. Bull., 1956, 5:10:90-4.

46. These figures fade into insignificance when it is noted that
Bott presented to the executors of
Lady Dugdale (his half-sister) a bill for
£134.12s.1 $\frac{1}{2}$ d.
47. Derbyshire Record Office, Matlock. Gresley Mss., D.77/Bott.
48. William Salt Library, Stafford. Hand-Morgan collection,
H.M.27/3 & 4.
49. Ibid., H.M. 27/5.
50. Cowper Museum, Olney. Grindon Mss.
51. Unpublished Sturton letters, copies of which are in the writer's
possession. As late as 1832 - 8, William Sturton
L.S.A. owned the shop alongside his home and
surgery at Greenwich in which he employed his
druggist brothers. When William Hammond
of Southgate, Middlesex, M.R.C.S. made his will
he left his only son William his house and
practice and specifically mentioned his shop.
See will of William Hammond. P.C.C. Prob.11.
545, (1837).

CHAPTER III

MEN OF SCIENCE.

The transition from superstition and speculation to modern science is conveniently known as the scientific revolution. It was a period of initially slow gestation which came to a remarkable fruition in the late seventeenth century. There then followed a time of quiescence, though possibly consolidation might be a better term, to be followed in the second half of the eighteenth century by another notable burst of activity. The application of reason in conjunction with observation and experiment which eroded the old belief in magic and esoteric mystery was a creation of the seventeenth and eighteenth centuries.

The English apothecary as much, if not more, than any other thinking man of those centuries was a child of the scientific revolution. He developed methods of reasoning and investigation, he experimented, he joined societies, he wrote to like minded contemporaries, he published his findings, and above all he had the good fortune to be 'afflicted' by the mania for collecting, be it 'curiosities' or new information. The succeeding generation of scientists were able not only to study an immensely richer collection of natural history specimens from distant lands but were able to read of the new interpretations of Nature which were based on sounder doctrines. The apothecary showed a particular interest in three fields of study, chemistry, botany and medicine and he made some outstanding contributions.

a) BOTANY

In no field of the developing sciences did the English apothecary have a better record than in that of botany. This is not surprising, as despite the influence of the Paracelsians, the majority of drugs at this period were of vegetable origin. On the Continent the strong interest in botany was equally apparent, though there the physicians were ^{more} active than in this country, particularly in the early years. In Italy were to be found Pierandrea Mattioli (1501-1577), M.D. of Padua, and Luca Ghini (1500-1556) who was the first occupant of the Chair of Botany ('Reder of Dioscorides' as he was called by Turner) at Bologna, and the first to demonstrate the value of herbaria.¹ It is however to the countries north of the Alps that we have to look for most of the major developments; the four men often honoured with the title 'Fathers of Botany' were German and Protestant.² Otto Brunfels (1464-1534), in the first instance a preacher and schoolmaster and who did not obtain his M.D. from Basel until near the end of his life, was the first to realise the necessity for clear illustrations; Jerome Bock or Hieronymus Tragus (1498-1554), physician and friend of Brunfels was the first to go direct to Nature for knowledge of plants; Leonhart Fuchs (1501-1566), M.D. of Ingoldstadt in 1524, was prepared to write about and illustrate plants such as the culinary cabbage which had not been included by the classical authors; and Valerius Cordus (1515-1544), M.D. of Marburg and Wittemberg was an indefatigable field botanist, discovering several hundred new species.³

The Swiss Conrad Gesner (1516-1565), zoologist, mineralogist and an authority on linguistics, so not primarily interested in botany should not be forgotten. Owing to his poverty he was unable to obtain his M.D. at Basel until 1541.⁴ In Spain there was Nicholas Monardes (1493-1588),

physician in Seville, who first published an illustration of the tobacco plant besides describing many other plants of the Americas,⁵ and in Portugal, Garcia da Orta (c.1500-1570), who had studied at the universities of Salamanca and Alcala and was granted a royal licence to practise physic. He travelled to India, botanised extensively and wrote of the East Indian plants.⁶

France also had some remarkable botanist/physicians.

Jean Ruel (1474-1537), was a physician at Soissons and became a professor in the university of Paris; he made the first attempt since Theophrastus to write a general natural history of plants.⁷

Then there was William Rondelet (1507-1566), M.D. of Montpellier where he was a great teacher of botany but only published on zoology. He was the son of an 'aromatarius' or druggist.⁸ Pierre Belon (1517-1564), M.D. Paris, studied botany under Valerius Cordus, travelled extensively and wrote of the plants (as well as on other subjects) that he had seen. Amongst those who came to study under Rondelet were Johann or Jean Bauhin (1541-1613), M.D., Jacques d'Alechamps (1513-1588) physician in Lyons, Pierre Pena M.D. Paris, and Pena's close friend Matthias de L'Obel (1538-1616) physician to William the Silent until the latter's assassination. After Pena abandoned his botany in favour of a lucrative medical practice de L'Obel became friendly with Rembert Dodoens (1517-1585), M.D. of Louvain and Charles de la L'Ecluse or Clusius (1526-1609), said to be the "....only botanist of his age who was not a physician".⁹

Others who should be mentioned were Caspar Bauhin (1560-1624) brother of Jean and M.D. of Basel who did work which was more valuable than that of his brother; Andrea Cesalpino (1519-1603), M.D. Bologna, described as 'the first systematist' and Joachim Jung (1587-1657), M.D. Padua, the first terminologist.¹⁰ At a rather later date there were

Joseph Pitton de Tournefort (1658-1708), M.D. Montpellier, a great classifier, Pierre Magnol (1638-1715), M.D. Montpellier, teacher and systematist, Marcello Malpighi (1628-1694) professor of medicine at the universities of Bologna, Pisa and Messina who studied vegetable histology, and Petrus Hotton (1648-1709) professor of physic and botanicks at Leyden who was particularly interested in South African plants.¹¹

In Germany the pattern was rather different, after the time of the four founding fathers those who had the greatest interest in botany were usually apothecaries. Basilius Besler (1561-1629) was a Nuremberg pharmacist who owned a pharmacy 'At the Image of Mary' and wrote the Hortus Eystettensis, a beautifully illustrated description of the botanical garden arranged by him for the Prince Bishop Johann Konrad von Gemmingen at Eichstätt.¹² Johann Jacob von Well (1725-1787) apothecary and collector, was ennobled and made professor of natural history at the university of Vienna. More important was the Familie Gärtner who had a pharmacy at Calw, near Stuttgart; Achatius (II) (1662-1728) and Karl Friedrich (1772-1850) who later practised medicine, are the best known.¹³ Carl Ludwig Willdenow (1765-1812) was the son of a pharmacist in Berlin and owned his father's shop from 1790 to 1798 but in 1801 was appointed director of the resuscitated botanical garden in that city and in 1810 was made professor at the university. He had a fine herbarium and was another great classifier.¹⁴

There is no doubt that botany's debt to the practitioners of medicine is immense, one that continued well into the nineteenth century with such remarkable men as J.D. Hooker and T.H. Huxley. The first botanist of note in the Renaissance in England was that stern and uncompromising Protestant, William Turner (c.1515-1568), M.D. Bologna. The first part of his

herbal was published in 1551 in London and the second and third parts in 1562 and 1568 at Cologne. In the preface he wrote that Drs. Clement, Wendy, Owen and Wotton and Master Falconer had " ... as much knowledge in herbes, yea, and more than diverse Italianes and Germanes, whyche have set furth in prynte Herballes and bokes of simples, ... Yet hath none of al these set furth any thyng."¹⁵

Turner's publication aimed chiefly at the description of the medicinal plants of Dioscorides but he understood that western European plants could not necessarily be identified with those in the eastern and central Mediterranean of the classical writers.

English doctors who followed in the footsteps of Turner were Dr. Robert Priest who translated Dodoens' Pemptades,¹⁶ Dr. Thomas Penny (c.1530-1588) friend of Gesner, Clusius and Gerard,¹⁷ Dr. William How (1619-1656) referred to by William Coles in his Art of simpling (1656) as one of the most expert in the art of plants and who had a physic garden in Westminster,¹⁸ Dr. Robert Morison (1620-1683), M.D. Angers, first professor of botany at Oxford and one of the early great systematists. Dr. Nehemia Grew (1641-1712), M.D. Leyden, wrote on the sexuality of flowers and like Malpighi carried out first class work on histology.¹⁹

Towards the end of his life Turner came in contact with an interesting and erudite group of London apothecaries many of whom had herb gardens. He frequently referred in his Herball to John Rich, the 'Maister Riche apothecary' in whose garden he ' ... saw many other good and strange herbes which I never saw elles in all England'. Turner also knew Hugh Morgan (?1510-1613) who figures frequently in de L'Obel's Adversaria. The latter speaks of him as a learned man with a keen interest in the new discoveries of the age as well as in the medical qualities of herbs. He too had a fine garden and came to have

a particular interest in West Indian plants, like the later James Petiver he was much in contact with sea captains and overseas merchants and with the great Continental pharmacists in Verona, Venice, Marseilles, Montpellier, Lille, Lyons and Antwerp.²⁰ Another contemporary was James Garrett, of Flemish origin he practised as an apothecary in Lime Street. Like many of his countrymen he had a particular fondness for tulips and Gerard relates that he grew them for over twenty years from his own and other people's seed.²¹ These men all knew the barber-surgeon John Gerard (1545-1612) who supervised Lord Burleigh's gardens in London and Theobals, and the College of Physicians' garden as well as his own in Holborn. His Herball (1597) made a great impact on the botanical world, its charm is so great that it remained immensely popular even after it was claimed that he had largely stolen the work of Dodoens by using Priest's translation, a charge which appears to have originated with Thomas Johnson.

Johnson (c.1604-1644) was another London apothecary who took a keen interest in botany, making a number of 'herborizings', two of which, those of 1629 and 1632 are the first regional catalogues of English plants.²² Johnson was asked in 1632 to edit a second edition of Gerard's Herball; with remarkable speed this was completed by November 1633, and there is no doubt that it is a fine piece of work.²³ As the title page announced Gerard's book was much enlarged and amended, it contains some 2,850 descriptions, illustrated by 2,700 figures of which 800 represented new species.²⁴

An important botanish apothecary contemporaneous with Thomas Johnson was John Parkinson, who has produced the most beloved herbals ever published. He was born in 1567 but did not publish till late in life. His first work was Paradisi in sole paradisus terrestris (1629) an

exceptionally early work on horticulture. It has great charm but its importance is eclipsed by his Theatrum botanicum ... (1640). As Trease has described it; "This huge work of 1755 large pages is profusely illustrated and is a mine of detailed information on the drugs of the period."²⁵ Like Johnson the charge of plagiarism has been brought against him. Dr. William How, M.D. in a work entitled Stirpium illustrationes (1655) published five years after Parkinson's death maintained that much material from L'Obel's unpublished manuscript also called Stirpium Illustrationes which came into Parkinson's possession on L'Obel's death in 1616 was used without any acknowledgment.²⁶ It is generally agreed that How's charges cannot be justified.

The suggestion has been made that the Society of Apothecaries' desire for Johnson to correct and enlarge Gerard's work stemmed from their growing quarrel with the physicians and the need to prove their knowledge of simples.²⁷ Their next corporate venture into the botanical field was with the setting up of the physic garden at Chelsea in 1676. Their first object had been to obtain a mooring for their barge but having a relatively long lease they decided to start a physic garden, the second to be established in England.²⁸

Little is known of the garden's first gardener/curators but in 1680 that controversial figure, John Watts, was appointed at his own suggestion.²⁹ Not, however, without opposition. Mr. Johnson enquired of the court, " ... why Mr Pratt must be putt out and Mr Watts putt in and what advantages by the one more than the other." Warden Herne and Mr. Phelps were of the belief that " ... his Jenius leads him that Way." This was no good reason for Mr Johnson who reiterated with, "Mr Pratt well understood exoticks and natives and the garden was already well planted and there was no reason to remove him for hee hath made a

garden of a heap of rubbish and gravel." In this Mr Chase agreed with him because he said, " Mr Watts might be a botanick but knowed not how much a gardner." However none of this saved Mr Pratt and John Watts was installed " ... to undertake the ordering and management and care of the Company's garden att Chelsey."³⁰

The order was confirmed the next meeting (27 February 1680), Mr Johnson still grumbling that he, " ... desired to know what is wanting in the garden that this great charge must be brought upon the company when 1,200 plants are there in a good condition and a flourishing garden."

John Watts hailed from Leicestershire, the son of a grazier of Ashby de la Zouch; he was apprenticed to Henry Sykes and gained his Freedom in 1670.³¹ There is little doubt that it was his energy and enthusiasm which not only changed the whole nature of the garden, but made it one of the most renowned in Europe. Before his arrival the Society's minutes give the impression that the garden was being run on the lines of a specialised market garden or herb garden. On 28 October 1678 Mr Warden Phelps moved that "now is the season to plant the garden with fruit trees ..." Whereupon it was agreed "that the fruit trees be nectarines of all sorts, peaches, apricocks, cherries and plums of several sorts of the best to be got."³² In August of that year it had already been reported that " ... the Company will have a very good crop of sage, rue, pennyroyal and sweet majoram and scurvy grass the next year."³³

Watts enthusiasm was so great that he was a considerable financial embarrassment to the Company, nor was without an eye to the main chance. Watts brought plants and ornaments with him for which the Society paid £50; he had produced a catalogue of these as had Pratt of those

plants which were already in the garden. This arrangement seems to have given John Watts the idea that a proportion of the plants were at his own disposal. At the court of 7 December 1682 it was minuted: "Mr Watts was here and desires to have money paid constantly., Saith hee is uneasy for that some reports that hee saith the plants in the garden are his and that he keeps a garden at his house to transplant them at his pleasure ... said several gents. coming there had asked him whose plants they were ... hopes he may sell such plants as he shall raise leaving sufficient to bee seen in the garden ... has bought 70 orange trees and hopes to raise them and set now and then one." He was asked why he had six men at this dead season especially when he had said one or two would be enough, to which he replied, "So many companies come to the garden he needs them to attend and protect the plants". To which he was told that he should " ... find for the men as it was his profit."³⁴

Soon after Watts had taken over Mr Phelps had moved in court " ... that a greenhouse is very convenient in the garden." The court was of the same opinion and a sub-committee was set up to deal with the matter.³⁵ One with a stove was erected not far from the river at a cost of £138. The garden now began to have many famous visitors. In the autumn of 1682 Dr Paul Hermann (1646-95) professor of botany at Leyden came over, and whilst here made the suggestion that there should be an exchange of plants and that Watts should visit Holland; a suggestion that was taken up. Hans Sloane, M.D. (Orange) was a frequent visitor, studying botany there soon after he arrived in England in 1679; in a letter to John Ray (1627-1705) he wrote that Watts expected an aloe to flower and that he had a crimson amaranthus from the East Indies.³⁶ John Evelyn made a visit in August 1685. "I went to

see Mr Watts ... keeper of the Apothecaries' gardens simples where there is a collection of innumerable rarities particularly besides many annuals, the tree bearing Jesuit's bark." He mentioned also, " ... the ingenious subterranean heat, conveyed by a stove under the conservatory all vaulted with brick so that he has the doors and windows open in the hardest frosts, secluding only the snow." Sloane complimented him on so many of his exotics having survived the severe winter but it is not surprising to learn that with such uneconomical methods the apothecaries were told in 1683 that they owed Watts £140 for what he had spent on the garden.³⁷ It is the first mention of the use of indirect methods of underfloor heating being used in greenhouses.

After a continuous battle between the Company, who tried to curb Watts' extravagance, and Watts who required more money, the two parted in 1690 or so. He built himself a fine brick house, landscaped a garden with hot houses in Enfield, and thereafter ignored the Company, which doubtless was by this time relieved to ignore him.³⁸ There would seem to be little doubt that John Watts was indeed a 'botanick' and not only a gardener, a view that is borne out by the fact that Edmond Halley in 1688, whilst he held the clerkship of the Royal Society, received a 'curious observation' from Watts, in which it is clear that the necessity of sunlight to green plants had been noted by him.³⁹

The Society finally severed its connections with John Watts when in June 1692 Samuel Doody and George Dare, both of them apothecaries, were asked to take an interest in the garden. Dare, late apprentice of Butler Kinkes and Peter Gelstropp, was made free on 6 July 1680, and Doody, apprentice of John Solley, two months later.⁴⁰

In August 1692 Doody's offer to oversee the garden free of charge was accepted but he soon was unable to make a profit and was given the same salary as Watts of £100 a year. For some reason unspecified the whole of the three year contract was not allowed to run and Doody was given £100 in lieu of the last year. The garden, which seems to have become more and more an encumbrance, was then leased to five members of the Society, Doody, Dare, James Petiver, Broomwich and John Jones. This arrangement lasted a bare year when Doody once more took over, proposing to lease it for eleven years without salary. He appears to have remained in charge until his death in 1706.⁴¹

Ray who had never liked John Watts terming him 'vainglorious', wrote to Aubrey on 24 August 1692, "I am very glad that so ingenious a person as Mr Doody is made keeper of the garden at Chelsey. I doubt not that he will answer the expectation men have of him and much promote Botanicks."⁴² Doody's particular interest lay with the cryptograms. Dr Robert Uvedale (1642-1722) of Enfield, a well known botanist in his day, wrote to his correspondent of many years standing Dr Richard Richardson, M.D. of Bierley, near Bradford that he was " ... very poor in Fuci, Algae, Musci, some of the last sort Mr Doody when alive, bestowed upon me."⁴³

John Jones was royal apothecary to Charles II who received an M.D. of Cambridge by royal mandate in 1678.⁴⁴ He took a keen interest in matters pertaining to the garden and led some of the 'herbarisings' such as that of the 11 March 1680.⁴⁵ He was not however in a more exact sense a botanist, any more than was George Dare.

On Doody's death there was once more the problem of how to run the physick garden. A garden committee was set up which included the master and wardens ex officio and nine nominated members.

Offers were made to lease the garden by men such as Dare and Isaac Rand, but for some reason were rejected. In the end, as already related, a joint stock company was setup. Financially it was far from satisfactory and if it had not been for help from Sir Hans Sloane it may well be suspected that the whole project would have collapsed. During this time the two moving spirits were James Petiver and Isaac Rand, the former being a man of great energy and the more important of the two.

James Petiver, like John Watts, Samuel Doody and James Sherard, came from the Midlands. He was born at Hilmorton, Warwickshire and was educated at the Free Grammar school in Rugby. On 6 October 1685 he gained his Freedom after an apprenticeship with Charles Feltham, apothecary of St. Bartholomew's Hospital; whether he was an entirely happy choice of apprentice-master is debateable as in 1683 he was fined £6.13s.4d for bad mithradate, Ther. Lond. and Ther. Andr.⁴⁶ Soon after his apprenticeship was finished he started up on his own in a pharmacy in Aldersgate Street near Long Lane at the sign of the White Cross. In 1695 he was elected a fellow of the Royal Society, the same year as he became apothecary to the Charterhouse.⁴⁷

His interests were not confined to botany but ranged through the full gamut of natural history; he delighted in shells, insects and fossils, and collected preserved reptiles, animals and mammalian skins. He had an extensive museum, in which there were between five and six thousand plants. It is said that Hans Sloane offered him £4,000 for the museum, but when he did acquire it he was greatly disappointed.⁴⁸ Unhappily Petiver was so busy amassing and adding to his collection he had little time to spend on conservation.

No man was more assiduous in promoting the study of natural history. In an announcement of the publication of the first part of his

Musei Petiveriani he entreated all who travelled abroad to make collections for him, " ... of whatever plants, shells, insects etc. they shall meet with, preserving them according to directions that I have made so easie as the meanest capacity is able to perform." At his shop, like that of his contemporary John Houghton, there met⁴⁹ men interested in extending the boundaries of knowledge. The White Cross was familiar to shipmasters, merchants, planters, surgeons, consuls and apothecaries. From there he sent the continuous stream of letters and parcels, containing drugs and directions for treatment, news sheets, recently printed books such as John Rays', paper for pressing and drying plants, wide mouthed bottles for pickling snakes, and perhaps most important of all detailed instructions on how to collect the desired curiosities. The botanical instruction often included samples of mounted plants and as a botanical guide Petiver's Ray's method of English plants illustrated. He used a number of goads to spur his collectors to greater activity; he stressed the benefit to science and mankind that would accrue, and that a collector of distinction could gain promotion. He was unfailing in giving the collector his fair share of publicity and the articles in Philosophical transactions are full of their names. Some of his collectors seem to have had also free medical advice and medicine.⁵⁰

Ray gratefully acknowledged Petiver's assistance when he was writing volume 3 of his Historia (1704). Petiver had contributed many of the descriptions of the new plants which were arriving from China, Africa and India, forming the section entitled 'Plantae rariores Chinensis, Madraspatanae et Africanae ...'. Ray considered him to be "the best skilled in oriental and indeed in all exotick plants of any man I know, as having seen various specimens of the same species in

all their states; and a man of the greatest correspondence of any in England as to these matters."⁵¹ The Apothecaries' Society were wise to appoint him demonstrator at Chelsea after the death of Samuel Doody.

He was a prolific writer. His first catalogue was Musei Petiver issued in ten parts between 1695 and 1703, which was followed by the Gazophylacium naturae et artis, issued in five parts, 1702-6. This work contained a hundred plates and included descriptions of plants from the Alps, Cape of Good Hope and American ferns. He wrote a number of herbals, such as Hortus Peruvianus medicinalis: or the South Sea herbal, the English Herbal, another which dealt with 'The virtues of several sovereign plants found wild in Maryland', and the London Herbal which gave the 'names, descriptions and virtues of such plants about London as have been observed in the several monthly herborizings made for use of young apothecaries and others ...". Typically he endeavoured to publish a popular journal to which he gave the name Monthly Miscellany or memoirs of the curious, but it failed and the third volume was never completed. There were also his numerous communications to the transactions of the Royal Society. As with all such prolific communicators his works are of uneven merit, but their main purpose was achieved, which was to stimulate and further the study of natural history.

His most original work was to produce 'exsiccatae' or sets of dried plants with printed labels. Labels were also produced separately, printed on one side of the paper only, and were intended to be used for labelling specimens in home produced herbaria. He introduced three sets, Hortus siccus chirurgicus, Hortus siccus pharmaceuticus and Botanicum Anglicum.⁵²

As a worker it has been said that he was slip-shod,⁵³ but he would certainly work to a high standard of care, as witness his report on rare flowers to be found in the gardens of the curious around London, with special reference to Chelsea, in the summer of 1714.⁵⁴ The Valentia Knotgrass was given its English and Latin names and all the synonyms to be found in the botanical works of Ray, Clusius, Parkinson, Caspar Bauhin and Chabreus, together with the exact references of the descriptions and illustrations to be found; in the case of 'Arch. Angelica' there are no less than fifteen authorities cited. In other entries he will note whether a cited figure agrees well with the actual plant, for example in the case of Pona's pine-leaved Candy knapweed he wrote, "Dr Plukenet's Figure (which he took from Sir George Wheeler's specimen) very well agrees with the Pattern which Dr Sherard sent me from Smyrna A.D.1705. Prosper Alpinuss' also is well cut."⁵⁵ It is apparent that at this time (a time when it was afflicted with dire financial troubles) the Chelsea garden was botanically speaking very satisfactory; time after time he writes, "... has lately flowered very well with us in Chelsea garden." In the section which he has called 'Indian Herbs and Trees' (in which he seems to mean the West Indies and Virginia) under Climbing Virginia eupatorium he has written, "It is the only Virginian Climber of this Tribe that has as yet come to our Knowledge, and never raised in any European garden before."⁵⁶

In 1704 Petiver's uncle, Richard Elborowe, wrote a far from admiring letter to his nephew. He accused James of having not reached his potential inspite of the advantages which he had had, advantages which are not specified. Probably Elborowe had wished for greater business acumen and he was disappointed that he had not married, but

certainly he could not accuse him of laziness.⁵⁷ He had his own practice, was apothecary to the Charterhouse, demonstrator at Chelsea, had a vast correspondence with ship's pursers, surgeons and apothecaries, physicians and botanists, studied and catalogued the material sent from Virginia, the Cape, Bengal, Malabar, the Phillipines and China and tried to satisfy the demands of his collectors, be it for medicines, Mr. Boyle's works 'epitomis'd' or give directions how to refine camphor, and sent English seeds: one suspects no day was ever long enough for him.

Amongst the Petiver papers and correspondence two names turn up with regularity, those of William Sherard and Samuel Dale. Sherard (1659-1728) was born at Bushby, Leicestershire, and after education with the local vicar and at the Merchant Taylors' school in London was elected to St. John's, Oxford, where he attained a B.C.L. in 1683 and the doctorate in 1694. He studied botany under Tournefort and Hermann and became a tutor to several sons of noble households. In 1703 he became consul for the Turkey Company at Smyrna and an energetic plant collector. Although he wrote only two edited works he had an excellent reputation as a botanist probably because he tried to master the systems of the day and reduce the chaos of nomenclature to order. On his death he bequeathed £3,000 to found a chair of botany at Oxford, a task he left to his younger brother James (1666-1738), an apothecary, to carry out.⁵⁸ This trust James administered so satisfactorily that Oxford university awarded him an M.D. in 1731, whereupon the College of Physicians admitted him to their fellowship without examination or fees.⁵⁹

The younger Sherard was by no means a negligible botanist himself. He had a particularly fine garden at Eltham, Kent, a catalogue of his collection being published by Dillenius in 1732 as Hortus Elthamensis.

It is often wrongly stated as in the Dictionary of National Biography that on 7 February, 1682, " ... he was apprenticed to Charles Watts, an apothecary who was curator of the botanical gardens at Chelsea ... under his guidance devoted himself to botany." The court minutes show that he was placed with Charles Watts but he was a much older man than John Watts and the records do not indicate that he had any particular interest in botany or horticulture.⁶⁰ Sherard was also a remarkably successful apothecary; according to Nichols he was one of Dr. Ratcliffe's apothecaries and made £70,000.⁶¹ Withall he was too an accomplished musician and violinist.

Samuel Dale (1659-1739) was another apothecary/botanist of the period who was of considerable note. On 5 May 1674 he was apprenticed as the "son of North. Dale of ye parish of St. Mary Whitechappell in County Middlsex. silk-thrower ... to Thos. Wells for 8 years."⁶² As he did not practise in London but in Braintree, Essex, he did not claim his Freedom of the company. There is no doubt that he acted as both physician and apothecary as Ray, in the preface of the first volume of his Historia plantarum (1686) alludes to him as "D. Samuel Dale, Medicus et Pharmacopaeus vicinus et familiaris noster, ... "⁶³, also Ray's supplement to his Catalogus (1688) contains several plants collected by Dale in various parts of Essex and he is again spoken of as 'medicus et pharmacopaeus'.

He first of all lived in Bocking End, a part of Braintree, and then at the invitation of his cousin John Ruggles, who owned all the property on one side of Bradford Street, moved down to the building known as the 'Old House'. Like his close friend John Ray, he was a Dissenter, but this did not prevent him from being involved in local affairs and with his father-in-law, Joshua Draper, was a prominent

member of Braintree's Four and Twenty.⁶⁴ His chief published work first appeared in 1693. His Pharmacologia ran to three editions in his lifetime and many more after his death; in fact the third edition was so much brought up to date by Dale that Pulteney could write that it had " ... the importance of a new work." He sent many communications to the Transactions of the Royal Society, writing on such subjects as the use of turnips in bread, a case of jaundice accompanied by a defect of vision, and he also contributed to John Houghton's Collections for the improvement of trade and industry. For many years he worked on a projected 'History of English Plants' which never came to fruition, principally because 'being in business' as he phrased it he was unable to stay for a long period in London in order to examine the late Adam Buddle's herbarium in detail, and a certain lack of co-operation on Hans Sloane's part in lending him the Buddle material. He succeeded however in producing a very large appendix to Silas Taylor's History and antiquities of Harwich and Dovercourt which dealt with the natural history of the area. He had a very sound knowledge of fossils, which has proved of great value to later geologists as he fully described those to be found at the Crag, Harwich, which has since been totally eroded away.

As in the case of Petiver and many of the other botanists of the day he had a wide circle of friends and correspondents who exchanged specimens and notes. He received plants from Edward Bulkeley and Daniel Dubois of Fort St. George, Madras, from Mark Catesby in Virginia and from a Mr. Matthews, deputy governor of St. Kitts. In 1727 he was sent specimens from the East Indies collected by Francis Dale, a young relation. The exact relationship is not known but Francis was probably the son of Francis Dale, an apothecary of Hoxton, whom Samuel had trained.⁶⁵

In trying to assess Dale's position in the botanical world it should be remembered that his Pharmacologia is usually regarded as the first systematic materia medica written. Like Petiver he made every effort to give each specimen in his collection every synonym known to him, and his descriptions are extremely detailed and accurate. Boulger has written " ... when we find critical forms of Menta, Atriplex, Artemisia, Satice and Actium separated, though in many cases not named, we shall probably not be wrong in classing Dale with his friend Buddle as one of the first critical students of our British flora."⁶⁶

A man that is often mentioned on Dale's labels and in his letters is Joseph Andrews of Sudbury; they would seem to have often travelled together on collecting expeditions in East Anglia. Petiver met him in 1716 when he made his botanical excursion with James Sherard. He wrote to Dr. John Thorpe of Rochester, "At Sudbury we met with Mr. Andrews an apothecary, a very obliging and curious botanist, who carried us to the *Alsiae Rutae fol and tenuifolia* ... he also obliged us with several dry specimens amongst them a new *Plantago aq.* ..." Today there are ten fascicles of Andrews dried plants in the Natural History Museum at South Kensington, which are well preserved and well labelled with detailed directions to the botanical station. Andrews was no great botanist not even a moderate one, but he helped to spread enthusiasm for the science and gave valuable assistance to those who were in a position to place it on a stronger footing.⁶⁷

Also worth mentioning is John Blackstone (1712-53) of Harefield and London. He was the son of Edward Blackstone, citizen and ironmonger of London but there were strong apothecarial influences in the family, as both his paternal grandfather, John, and his uncle William, were

members of the London company.⁶⁸ John Blackstone the elder was a friend of Hans Sloane and after serving on both the garden committee and that of the elaboratory was master in 1713.⁶⁹ John Blackstone the younger was apprenticed to Thomas Bearcroft (like John Hill) in 1729 for eight years but did not gain his Freedom until 7 March 1738 the delay probably being due to illness.⁷⁰

Of a delicate constitution he spent the summer of 1736 recuperating from a long illness at Harefield and employed the time by searching for new plants. In this he was remarkably successful and so was encouraged to write a catalogue of the plants of the district. The following year saw the publication of his Fasiculus plantarum circa Harefield sponte nascentium. It was arranged in alphabetical order with synonyms taken from John Bauhin, Gerard, Parkinson and others; the total number of plants, mostly phanerogams but a few cryptogams, was 527.⁷¹ In the summer of 1737 he went to stay with his uncle, another namesake, who was keeper of the forest of Wychwood, and there carried out the same service. He was encouraged in his study by both Richard Richardson of Bierley and Sloane.

After admission to the Apothecaries' Society he was established in practice in Fleet Street 'at the Griffin near Salisbury Court.' Whilst practising here he came in contact with Joseph Miller of Bishopsgate, Isaac Rand of the Haymarket, John Field of Newgate Street, John Wilmer of Bishopsgate Street and Robert Nicholls of Tothill Street, Westminster, all apothecaries who took a keen interest in botany and the Chelsea garden.⁷² Early in 1744 he was in correspondence with Thomas Halfhyde a well known apothecary and botanist of Cambridge.⁷³

Two years later he wrote Specimen botanicum quo plantarum Angliae indigenarum. which gave the localities of 366 species of the more rare and local English

plants; included were contributions by Ambrose Dawson, physician at St. George's, Thornbeck, a surgeon of Ingleton, Yorkshire, Wilmer, Nicholls, Miller, John Hill and William Watson. Pulteney regarded it as a valuable addition to Ray's third edition of his Synopsis, and was the last book to be published in England on indigenous botany before the ascendancy of the Linnaean system.⁷⁴

Blackstone's closest friend was William Watson who was three years his junior. Watson has already been mentioned for his work on electricity but in his own day he was equally well known for his botanical studies. He wrote knowledgeable papers on botanical history and was active in the introduction of the Linnaean system but the attention of continental botanists was drawn to his work by his paper on the star puffball or geaster.⁷⁵ He was also interested in poisoning by fungi. William Watson's long correspondence with Richard Pulteney began sometime earlier than 1755 and it was a result of this connection that many of Pulteney's papers were published first in the Gentleman's Magazine and then the Philosophical Transactions of the Royal Society.

From an early age Richard Pulteney evinced a keen interest in botany. In 1742 when he was only twelve years of age he discovered *Campanula patula* in Buddon Wood, near Quorn, Leicestershire. He told Watson in November 1756 as he wrote John Hill in May 1758, that a few years later he told George Deering (c.1695-1749) of it who agreed that it was a nondescript, but when he sent a specimen to John Blackstone in 1749 he was informed that Dillenius had first discovered it near Worcester and had described it in Hort. Elthamensis⁷⁶ In 1755 Pulteney sent his hortus siccus to Watson who thought very well of it; his herbarium is now in the Natural History Museum but

has now been broken up and distributed amongst other herbaria.

He wrote on the 'Seeds of Fungi' (1750), the styptic agaric (1751), numerous notes on poisonous plants, on acacias, and on the use of botany in agriculture and the feeding of cattle, in the Gentleman's Magazine, and on rare plants in Leicestershire, observations on the sleep of plants, on belladonna, and a historical memoir on lichens in the Transactions. Herwood and Noel write, "He did more than any one else to stimulate interest in the matter [Leicestershire botany] and deservedly ranks first as its earliest recorder, being responsible for the first records of nearly 600 species."⁷⁷ These manuscripts catalogues, beautifully produced, are to be seen in Leicester Museum, the Linnaean Library and the British Museum, (National History, Botany Dept.). He published two important books A general view of the life and writings of Linnaeus (1781)⁷⁸ and his two volume Historical and biographical sketches of the progress of botany from its origin to the introduction of the Linnaean system (1790). Such a work as the latter had never been attempted before and had originally been intended as an introduction to a Flora Anglica which exists only in manuscript form. The Sketches proved immensely popular and is still widely quoted; they are valuable in as much that if he did not know some biographical detail then he said so frankly.

Dr. Watson put Pulteney in contact with two notable botanists of the day, John Hill (1706-1775) and William Hudson, both of whom were at work on preparing a British flora. Hill published many botanical works and Richard was eager to help him in his latest project, sending him notes, seeds and specimens. He was grievously disappointed in the results. He wrote his uncle George Tomlinson, "I have laughed very heartily at your burlesque of Hill by calling him very properly

a lillocking wretch ... I could almost wish I had never taken mine, for it will absolutely be of no use to me except basely for the sake of quoting, ... I think I never saw more puffing advertisements than his in my life nor books that less answered the intention expected. I am even sorry you mentioned them in the same paragraph with Miller's which are undoubtedly some of the most sumptuous ever published and by which I doubt not he will get much money."⁷⁹

For Hudson he had the greatest respect.⁸⁰ The two men's letters afford a strong contrast, Hill's are in a large, flamboyant handwriting, friendly and encouraging, whilst Hudson's are brusque to the point of rudeness. Both men at least started out in life as apothecaries. Hill was apprenticed on 4 July 1732 to Thomas Bearcroft and on the latter's death was turned over to Robert Watson.⁸¹ He did not complete his apprenticeship and never became a member of the London Society; in 1750 he purchased an M.D. from St. Andrews university and made a faltering living from selling herbal medicines and journalism. Nevertheless he was amongst the first to recognise the value of the Linnaean system and accurately predicted that it would persist even when newer natural systems had been devised.⁸²

William Hudson (1730?-1793) was born at the White Lion inn, Kendal which was kept by his father, and was educated at Kendal Grammar School, after which he was apprenticed to George Otway a London apothecary.⁸³ Like William Watson he gained the prize for botany which was awarded by the Apothecaries' Company, a copy of Ray's Synopsis. In 1757, even before he obtained his freedom from the Society he became resident sub-librarian at the newly formed British Museum; there he studied the collected herbaria of Hans Sloane which enabled him to make an adaptation of the Linnaean nomenclature to plants named in the

Ray era. The first edition of his Flora Anglica appeared in 1762 and this usually ^{is} regarded as marking the establishment of Linnaean ideas. It is obvious from a letter of William Watson's to Pulteney that the latter was hurt by lack of acknowledgment by Hudson of the help he had received. It appears however that it was an unfortunate accident as Watson wrote on 11 December 1762, "Before my having received your last letter he [Hudson] lamented the neglect of the printer, who had carelessly, though it was in the proof sheet, neglected to insert your name in the corrected one. He confesses that his Flora owes much to your labours and is grieved at this omission of your name ... He informs me further that he retains a very great regard for you ..."

By 1762 Hudson was practising as an apothecary in Panton Street, the Haymarket, and from 1765 to 1771 was 'praefectus horti' at the Chelsea Physic Garden. Hudson, like Pulteney, had other interests in natural history besides botany, he in mollusca and antomology, and Pulteney in conchology. Hudson had a very fine collection of insects which were lost in a disastrous fire in 1783, and also many of his dried plants. Jonathan Stokes suggests that he did not recover from this great loss and it hastened his death.⁸⁴

Before leaving the subject of the botanist/apothecaries two others should be mentioned, William Sole (1741-1802) and William Curtis (1746-1799). Sole was born at Thetford, the eldest son of John Sole and Martha, the daughter of John Rayner a banker of Ely.⁸⁵ He was educated at the King's School in Ely and then was apprenticed for five years in 1758 to Robert Cory, apothecary of Cambridge, to whom the Dictionary of National Biography has given the courtesy title of 'Dr. Cory'.⁸⁶ He is said to have migrated to Bath with a relative

and poet Christopher Anstey; in any event he was there by 1770 because he took Danvers Graves as his apprentice, and five years later Thomas Amor.⁸⁷ He went into partnership with Thomas West who would appear to have been the senior partner, as in a letter to William Jones of Great Russell Street, London, he wrote on 28 November 1781 that all the material received had been up to standard except for the Ext. Cathartic. The extract had had to be evaporated again with a consequent loss of $3\frac{1}{2}$ ounces 'for which Mr west required reimbursement.'⁸⁸ They also desired one or two dozen live vipers urgently, and a special pewter throat syringe.

Stokes related that William Sole travelled every year over some part of Britain in pursuit of indigenous plants, and that he had a fine garden.⁸⁹ He carried on a long correspondence with John Pitchford of Norwich on mints and in 1789 published his Menthae Britannicae. He wrote an account of the commonest English grasses together with their agricultural uses, and also a flora of Bath. Sole contributed papers to both the Bath and West of England Agricultural Society and to the Bath Philosophical Society.⁹⁰ He was a correspondent of William Curtis and a contributor to his gardens in Bermondsey and Lambeth Marsh. On 1 May 1777 he wrote, 'Dear Sir, I suppose you are equally distracted between Botany and Business as myself, therefore can easily account for your long silence. I am impatient to know what plants my catalogue will afford you that they may be transmitted before the season is too far advanced, and notwithstanding I am so much yr. debtor for the many plants you gave me in ye autumn I have taken the liberty to draw a fresh bill on you for more. ...'⁹¹

After Hudson resigned from the Chelsea garden in 1771, Stanesby Alchorne, apothecary, and a botanist of merit, was appointed demonstrator until a successor could be found. He held the post in an honorary capacity until January 1773 when William Curtis

took over.⁹² Curtis came from a family of apothecaries who were Quakers.⁹³ His father was a tanner in Alton, Hampshire, but he received his first training from his grandfather, an apothecary in the same town. In 1768 he came to London to gain further experience under George Vaux, a surgeon in Pudding Lane, but after a year moved on to Thomas Talwin at 51, Gracechurch Street, a freeman of the Society. He attended St. Thomas's Hospital and was there taken on his first botanical excursions by that stimulating lecturer George Fordyce. Fordyce was so impressed by his zeal that he made him botanical demonstrator. He gained his Freedom in 1771 and it is stated that he inherited Talwin's practice at this time.⁹⁴ W.H. Curtis is of the opinion that he soon sold it to his partner or assistant, a Mr. Wavell, but it is more likely that he sold only a part interest as he continued to live there until April 1780, when he seems to have moved round the corner, probably at the time of his marriage to Mary Winter.⁹⁵ Further confirmation of this view is found in the statement by W.H.Curtis that William's younger brother John was apprenticed to him just about this time.⁹⁶

It does not seem in doubt however that in 1771 he took about an acre of Restoration Spring Garden for the culture of British plants, in conjunction with Thomas and Benjamin White, the two brothers of Gilbert White of Selborne. This first botanical garden was succeeded by a larger one at Lambeth Marsh opened on January 1 1779, and another at Charlton, Kent, about which little is known. The first number of his Flora Londinensis was published in the May of 1775, a flora which he hoped would eventually cover the whole of Great Britain. It was a fine attempt but was to prove a financial burden. Nothing daunted he started his Botanical magazine in 1787, which although

in many ways an inferior production became an immediate success, soon achieving a monthly sale of 3,000 copies. After a number of vicissitudes it is still in being.

Probably because of his horticultural and publishing activities Curtis did not prove a success at Chelsea. He was unpunctual at lectures and organised the herbarizings badly, and worst of all failed to supply the Royal Society with its fifty dried specimens a year, a failure which could have resulted in the Apothecaries losing their garden. His resignation was accepted in August 1777. Curtis was no dedicated apothecary but found his niche in the publication of botanical studies, a work in which he was to gain renown.

The English botanist/apothecary did not produce a John Ray or a Carl Linné, not even a De Jussieu or a De Candolle, a Malpighi or a Grew, but they were excellent men of the second rank, and as communicators on a regional, national or international basis they could scarcely be bettered.

Notes and References.

1. G.S. Boulger & E. Hawkes, Pioneers of plant study, London, Sheldon Press, 1928, p.146.
2. W.P.D. Wightman, Science and the renaissance, Aberdeen, University Press, 1962, 1:194.
3. Ibid., pp.192-3. He was the son of Euricius Cordus (1486-1535) M.D. Ferrara, a physician who was also interested in botanical reform.
4. G. Tergit, Flowers through the ages, London, C. Skilton, 1972 reprint, p.82.
5. Boulger & Hawkes, op.cit., p.123.; G. Trease, Pharmacy in history, London, Bailliere & Cox, 1964, p.98.
6. Boulger & Hawkes, op.cit., p.155.; Trease, op.cit., p.96.
7. Boulger & Hawkes, op.cit., p.131.
8. Ibid., p.164.
9. Ibid., pp.165, 175.
10. Ibid., p.191.
11. Ibid., pp.198, 201.
12. A.M. Coats, The book of flowers, four centuries of flower illustration, London, Phaidon, 1973, p.14, texts relating to plates 31 and 34. Another Nuremberg pharmacist was Georg or Jörgen Oellinger, who had established the first botanical garden in that city by 1520; it lay next to his pharmacy at the Swan and from it he supplied Bock and Brunfels with plants and information. See F. Ferchl, Chemisch-Pharmazeutische Bio und Bibliographiken, Mittenwald,

A. Némayer, 1938, p.387.

One of the greatest florilegiums of the eighteenth century the Hortus Nitidissimus was produced by C.J. Trew a wealthy Nuremberg physician.

13. A. Adlung & G. Urdang, Praktiker, Politiker und Historiker der Pharmazie, Berlin, Julius Springer, 1935, p.429.
14. H. Schelenz, Geschichte der Pharmazie, Berlin, Julius Springer, 1904, p.624.
15. Boulger & Hawkes, op.cit., p.149. Master Falconer was probably John Falconer, pupil of Ghini and correspondent of Gesner, who had a fine herbarium. Turner's interest was not confined to plants, he also wrote on birds and A.H.Evans said of his Avium (1544) " ... almost every page bears witness to a personal knowledge ... which would be distinctly creditable even to a modern ornithologist." See Wightman, op.cit., p.200.
16. R.H. Jeffers, The friends of John Gerard, Falls Village, The Herb Grower Press, 1967, p.28.
17. C.E. Raven, English naturalists from Neckham to Ray, Cambridge, University Press, 1947, pp.153-171.
18. Ibid., pp.298-304.; J. Britten (J.E. Dandy editor), The Sloane herbarium, London, Trustees of the British Museum, 1958, p.168.
19. Boulger & Hawkes, op.cit., p.201.

20. Raven, op.cit., pp.116-7. Hugh Morgan's garden was in Coleman Street in St. Stephen's parish. He should not be confused with Edward Morgan (fl.1639-1685) who was gardener and botanist at the physic garden in Westminster; Edward accompanied Thomas Johnson on his trip to Wales.
See Britten, op.cit., pp.168-170.
21. Jeffers, op.cit., pp.65-66. Clusius saw much of James Garret and his garden near London Wall at Aldgate.
22. Trease, op.cit., p.116.
23. Raven, op.cit., pp.273-297.
24. Jeffers, op.cit., p.91.
25. Treasé, op.cit., pp.114-15. Parkinson was 'Botaniche' to Charles I. He and the father of John Chase, another apothecary, had received " ... a grant of a small parcel of land next to the Tennis Court in ST. Jameses Fields to make thereof a garden of plants for his Majesty's use and delight, towards the inclosing of which with a wall, erecting thereon a small garden house of two rooms and furnishing it with plants your petitioner's father was out £200 ..." The petitioner was John Chase, apothecary to Charles I.
See Public Record Office, State papers (domestic), Ms. 29/17, f.23. September 1660.
26. Jeffers, op.cit., p.95.
27. Ibid., p.91.

28. Oxford's physic garden was founded in 1621.
29. Guildhall Library. Apothecaries' Society court minutes,
Ms. 8200/2, f.253v. 21 January 1680.;
f.284r. 26 June 1679.
30. There are no further references to the displaced Mr Pratt in the
Society's minutes but it seems likely that
he went as gardener to Sir Thomas Willughby,
the son of John Ray's benefactor
Francis Willughby. See E. Lankester (editor)
The correspondence of John Ray,
London, The Ray Society, 1848, p.210.
A letter from Ray to Sloane, 8 January 1689.
31. Apothecaries' Society court minutes. Ms. 8200/2, f.71v.
1 July 1662.; f.136v. 5 July 1670.
32. Ibid., f.241v. 28 October 1678.
33. Ibid., f.239r. 4 August 1678.
34. Ibid., Ms. 8200/3, f.85. 7 December 1682.
35. Ibid., Ms. 8200/2, f.256r. 26 March 1680.
36. E. Lankester (editor, The correspondence of John Ray,
London, The Ray Society, 1848, pp.156-158
(11 November 1684), pp.158-9, (20 December 1684)
p.161 (7 March 1685).
37. Ms. 8200/3, ff. 137, 140. 5 July 1683, 7 August 1683.
38. For further details concerning John Watts see J.G.L. Burnby &
A.E. Robinson, And they blew exceeding fine;
Robert Uvedale, 1642-1722, Enfield, The
Edmonton Hundred Historical Society, 1976,
appendix A pp.16-17.

39. C.A. Ronan, Edmond Halley, genius in eclipse, London, Macdonald, 1970, p.95.
40. Ms. 8200/3 , f.6. 6 July 1680; f.11 7 September 1680.
41. C.Wall, H.C. Cameron & E.A. Underwood, A history of the Worshipful Society of Apothecaries of London, Oxford, University Press, 1963, 1:167.
42. R.W.T. Gunther (Editor), Further correspondence of John Ray, London, The Ray Society, 1928, p.286.
Ray to Tancred Robinson. 26 September 1684.
pp.175-6. Ray to John Aubrey. 24 August 1692.
Doody contributed to Ray's Synopsis,
2nd edition 1696. See *ibid.*, p.175.
43. J. Nichols, Illustrations of the literary history of the eighteenth century ..., London, J. Nichols, 1818, 3:321-51, see p.345. Letter of Dr. Robert Uvedale to Dr. Richard Richardson, 27 January 1719.
44. Trease, *op.cit.*, p.133.
45. Ms. 8200/2, f.256r. 26 March 1680.
46. Ms. 8200/3, f.183. 6 October 1685.; f.99. 10 June 1683.
47. Dictionary of National Biography. XLV: 85-86.
48. Petiver bequeathed his collection to Sloane in 1711, " ... if I should dy before my return from Holland" in return for £500 and the cancellation of a bond. Britten, *op.cit.*, pp.175-7.
49. Houghton was keenly interested in the promotion of husbandry.
50. British Library. Sloane Mss. Ms. 4063, f.51. Letter from Starrenberg, January 1701. "As for the

drying of plants I have not been provided with the necessary quantity of paper".

Ms. 3321, f.220. Letter from James Cuninghame, September 1707. "But so soon as I gott to Banjar I received yrs. dated 26 Dec. 1704, and also your Centuries and Tables."

Ms. 3321. f.110. Letter from Edward Bulkeley, February 1703. "I should be glad to receive a neat box for specimens of all sorts with room for 100 sorts. I expect and much desire Mr. Raye's 3^d volume of Pl. and if you or ye Society cannot afford to send it me, my sister will pay ye Price".

Ms. 4064, f.2. Letter from Robert Ellis, April 1704. "I would desire you to send me one Pott of your Lucatillis Balsam and ... something yt. will disperse Wind, for I am sometimes sore afflicted with it, with Directions how to use ye same". From this letter one gathers that Petiver paid some of his collectors. A Robert Stevens had been offered 5[£] a volume, but he deemed it insufficient. Britten (p.177) has transcribed the hieroglyphic as an 'N' but feels it must be either 'li' or Gn.(guinea); £5 or £5.5s. would have been a handsome sum of money and it is suggested 5s. is more likely.

51. Lankester, op.cit., p.403. Letter written by Ray to Petiver in 1702.
52. P.A. Saccardo, 'Petiver's exsiccatae', Jnl. of Botany, 1899, 27:227.

53. Dictionary of National Biography. XLV:86.
54. Philosophical transactions of the Royal Society, 29:229-244,
see pp.229,238.
55. Ibid., pp.237-8.
56. Ibid., p.353.
57. Sloane Mss. Ms. 4064, f.1.
58. Dictionary of National Biography, LII:67-8.
59. Ibid., LII:66-7.
60. Apothecaries' Society court minutes. Ms. 8200/1, f.485. 11 January
1650. "Charles Wats [sic] son of Richard Wats,
late of Wolverton, Warks, decd., exd. apprd.
and bound to Edwd. Pilkington for 9 years
from Midsummer last past." In the event he
only did eight years as he was freed on
11 June 1657. James Sherard did not stay
with him long but went to Watts' ex-apprentice
Richard Fownes until 6 November 1688 when he
was turned over to Jonathan Kestin. See
Ms. 8200/3, f.52. 7 February 1682; f.270
6 November 1688. He was made free
4 March 1690. See Ms. 8200/3, f.294.
61. J. Nichols, Literary anecdotes of the eighteenth century, London,
J. Nichols, 1808, 1:403.
62. Apothecaries' Society court minutes, Ms. 8200/2, f.183v
5 May 1674.
63. G.S. Boulger, 'Samuel Dale', Jnl. of Botany, 1883, 21:193-7,
225-331, see pp.193-4.

64. W. Ashwell & E. Szlichcinska, John Ray, naturalist (1627-1705), Braintree and Bocking civic society, 1977, pp.12-13,9.
65. Apothecaries' Society court minutes, Ms. 8200/4, f.104
 12 October 1699. "Francis Dale sought freedom having done a 7 year apprenticeship with Samuel Dale at Braintree". This was agreed upon provided his examination proved satisfactory and he paid £15. Thomas Dale, 'Anglo-Britannus' at Leyden dedicated his M.D. thesis presented in June 1723 to " ... his father Francis Dale, apothecary of Hoxton; to his uncle Samuel Dale, the apothecary & author of Braintree; to William Sherard, L.L.D.; Herman Boerhaave, M.D.; J.J. Dillenius; John Martyn, the botanist." Thomas emigrated to Charlestown, South Carolina where two of his sons died but a third, Thomas, returned to graduate at Edinburgh in 1775 and then practised in London.
 See, R.W. Innes Smith, English-speaking students of medicine at the university of Leyden. Edinburgh, Oliver & Boyd, 1932. p.63.
 It should be noted that Thomas Dale spent only three months at Leyden.
66. Boulger (Samuel Dale), op.cit., p.194.
67. G.S. Boulger & J. Britten, 'Joseph Andrews', Jnl. of Botany, 1918, 56:257-8.

68. Apothecaries' Society court minutes. Ms. 8200/2, f.170v.
4 February 1673.
John Blackstone the elder; Ms. 8200/4,
f.210, 4 July 1704, his son William Blackstone.
69. Ibid., Ms. 8200/4, ff. 185, 224, 261.
70. Ibid., Ms. 8200/6, f.44v. 5 August 1729; f.135v. 7 March 1738.
71. D.H. Kent, 'John Blackstone, apothecary and botanist (1712-53)',
Watsonia, 1949-50, 1:141-48, see p.143.
72. Ibid., p.145.
73. T.D. Whittet & M. Newbold, 'Some eminent Cambridge apothecaries',
Trans.Brit. Soc. Hist. Pharm.,
1977, 1:4:203.
74. Kent, op.cit., p.146.
75. Dictionary of National Biography, LX:45-47.
76. The Linnean Society Library. The Pulteney correspondence,
2 November 1756; 20 May 1758.
Deering was of German origin; he took a degree
at Rheims and studied anatomy and botany
in Paris under Bernard de Jussieu, 1718-9.
He came to London and was a member of the
botanical society established by John Martyn.
In 1736 he began to practise in Nottingham.
See Dictionary of National Biography, XIV:279-80.
77. A.R. Horwood & C.W.F. Noel, The flora of Leicestershire and Rutland,
Oxford, University Press, 1933, p.clxxxix.
78. Pulteney is always regarded as a zealous supporter of Linnaeus
(see R.H. Jeffers, 'Richard Pulteney, M.D.
F.R.S. (1730-1801) and his correspondents',

Proc. Linn. Soc. Ldn., 1960, 171:15-26,
 see p.15) and so it is interesting to note
 what he wrote to John Hill in 1758 or so,
 "For my own part though I like the sexual
 scheme in as much as it is simple and the
 classical charcters and orders easy to
 retain in the memory, yet I confess I have
 so great a regard for the Natural Classes of
 plants however imperfectly they be known at
 present that I would rather wish to have the
 artificial character dispensed with then
 the natural". From a rough collection of
 notes and copies of letters he had sent to Hill.

79. Copy of a letter to G. Tomlinson dated 15 February 1757.

80. Copy of a letter to G. Tomlinson dated 25 February 1757.

He wrote, "Mr Hudson lately elected one of the
 assistants at the Museum is an excellent
 botanist".

81. Inland Revenue apprenticeship records. I.R./1/13, f.76. John the
 son of Richard Hill of Dymock, Gloucestershire
 was apprenticed for 8 years from 4 July 1732
 to Thomas Bearcroft. Premium £90.

82. Boulger & Hawkes, op.cit., pp.255-7.

83. Apothecaries' Society court minutes. Ms. 8200/7, ff.24, 130.

He gained his freedom 4 July 1758;

Dictionary of National Biography, XXVIII:155.

84. J. Britten & G.S. Boulger, 'Jonathan Stokes and his commentaries',

Jnl. of Botany 1914, 52:319.

85. Dictionary of National Biography, LIII:213.
86. Inland Revenue apprenticeship records, I.R./1/53, f.^x73,
 August 1758, a five year apprenticeship for
 which a premium of £31.10s was paid.
 Robert Cory, son of John Cory of Landbeach,
 Cambridgeshire, clerk, had been the
 apprentice of Hugh Trimnel, citizen and
 apothecary of London. See I.R./1/8, f.178.
 Trimnel was a cultured man who subscribed
 to such books as Thomas Uvedale's
Memoirs of Philip de Commynes.
87. Ibid., I.R./1/26, f.172.; I.R./1/28, f.123.
88. G.M. Watson, "Some eighteenth century trading accounts" in
 F.N.L. Poynter (editor) The evolution of
 pharmacy in Britain, London, Pitman Med. Pub.Co.,
 1965, pp.45-77, see p.51.
89. Britten & Boulger, op.cit., p.317.
90. R.H. Jeffers, 'Richard Pulteney, M.D. F.R.S. (1730-1801) and his
 correspondents', Proc. Linn. Soc. Ldn.,
 1960, 171:15-26, see p.24.
91. W.H. Curtis, William Curtis, 1746-1799, Winchester, Warren & Son,
 1941, p.29.
92. Cameron, op.cit., pp.177-9, 412.
93. His grandfather, uncle, two brothers and cousin were surgeons and
 apothecaries.
94. Cameron, op.cit., p.178.; W.H. Curtis, op.cit., p.7.; Ms. 8200/8,
 f. 81. 17 December 1771. "William Curtis
 who served his grandfather, John Curtis,

apothecary at Alton for five years in manner of an apprentice, and afterwards was with Mr. George Vaux for one year, and Mr Thomas Talwin, a member of this Company for two years, was presented to this Court of Assistants, 13 June last, apprd., and being one of the people called Quakers took his solemn affirmation and made free by Redemption". George Vaux was a citizen and surgeon of London. See I.R./1/20, f.89, David Cloack was apprenticed for seven years from 9 August 1753 with George Vaux, surgeon of London.

95. W.H. Curtis, op.cit., pp.11,49,56.

96. Ibid., p.9.

b) CHEMISTRY.

Pharmacy being a multi-disciplinary subject, of which chemistry is one important component, it is understandable that apothecaries should not only have been drawn to the subject but also contributed significantly to its advance. The work of the continental chemist-apothecary was of major importance, but the record in this country is poor in comparison. To mention merely some of the workers on the Continent is to compile an impressive list:-

France

Nicholas Lémery (1635-1715). 'Apôticaire du Roy', author of Cours de chymie (1673) which was translated into English, German, Dutch, Italian and Latin. Urged the study of organic acids believing them to be the active principles of plants.

Étienne Fr. Geoffroy (1672-1731), the first to produce a table of affinities. He was the son of Mathiue-François Geoffroy (1644-1708) whose pharmacy is regarded as the birth place of the Parisian Academy of Science. His younger brother Claude Joseph, apothecary and chemist contributed to the Royal Society's Philosophical Transactions. Both were elected F.R.S. Étienne in 1698 and Claude 1715.

Guillaume François Rouelle (1703-1770). Lecturer at the Jardin des Plantes and ran private courses: was the teacher of Antoine Laurent Lavoisier, Joseph Louis Proust and the encyclopedist Diderot. Is said to have been the first to define a 'salt' in chemical terms.

Antoine Baumé (1728-1804). Published amongst other textbooks, 'Plan d'un cours de chimie experimentale et raisonnée'. One of the first

large scale manufacturers of galenicals and chemicals in France, including sal ammoniac, lead acetate, tin chloride and mercury salts by the hundredweight. Worked on the specific gravities of fluids and investigated platinum.

Antoine Augustin Parmentier (1737-1813). Conducted chemical analyses of food stuffs and induced the French to include potatoes in their diet.

Joseph Louis Proust (1754-1826). At the same time as working in a pharmacy he lectured at the Palais Royal in chemistry; he taught in Spain at Segovia and Vargara, became professor of chemistry in Madrid and director of the Royal Laboratory. As a phytochemist he studied sugars and gums, and also proteins; he discovered mannitol and glucose, separated leucin and casein and discovered urea (1807), but is best known for his law of definite and constant proportions, a foundation stone of chemistry.

Louis Nicolas Vauquelin (1763-1829). He worked for 25 years with Fourcroy, professor at the Athenaeum and the Jardin des Plantes. He became professor at the Paris School of Mines and assayer at the Royal Mint, then at the Paris School of Medicine. He confirmed the identity of lithium and discovered the elements chromium and beryllium; worked on the action of vinegar on lead and pewter, and the manufacture of alum and brass. Was a pioneer in plant chemistry and extracted 'quina' from cinchona bark.

Charles Louis Derosne (1780-1846). A manufacturing pharmacist who in 1803 isolated narcotine from opium; as it is not narcotic now re-named noscapine.

Pierre Robiquet (1780-1840). Professor of pharmacy in Paris. Isolated amygdalin, caffeine and alizarin in conjunction with Joseph Pelletier and with his teacher Vauquelin, asparagine. Continued work on Derosne's narcotine and later isolated codeine.

Bertrand Pelletier (1761-1797). He directed Rouelle's famous pharmacy; worked on preparations of arsenic and phosphoric acids and wrote monographs on barium chloride, potassium carbonate, ethyl acetate and soap.

Pierre Joseph Pelletier (1788-1842) son of the above, Professor at Paris School of Pharmacy. He wrote in conjunction with Magendie a memoir on ipecachuana, was particularly interested in the alkaloids and with Caventou isolated quinine, cinchonine, strychnine and brucine, and veratrine.

Joseph Bienaimé Caventou (1795-1877). Hospital pharmacist for some years. Professor at the Paris School of Pharmacy. Carried out investigations into cochineal and into the alkaloids and purines as mentioned above.

Jean Baptiste Dumas (1800-84). Was apprenticed to Le Royer a Swiss pharmacist (who investigated digitalis purpurea and showed the presence of iodine in plants) but immediately forsook pharmacy for chemistry to which he made fundamental contributions.

Germany

Caspar Neumann (1685-1737) F.R.S. Apothecary to the Prussian court and in 1723 was appointed professor of practical chemistry at the Collegium medico-chirurgicum in Berlin. Travelled extensively in order to study chemistry, visited Hanckwitz

London and worked with the Geoffroy brothers in Paris. He made a study of plant constituents and a classification; investigated ambergris, the volatile oils, and discovered thymol. Contributed to Philosophical Transactions.

Andreas Sigismund Marggraff (1707-1782). Pupil of Neumann and much admired by Joseph Black. Made the discovery of sugar in beets.

Jacob Reinbold Spielmann (1722-1783). Lecturer in chemistry at University of Strasburg, giving his lectures in the laboratory of his apothecary's shop. Wrote an excellent text book.

Carl Gottfried Hagen (1749-1829) Of Konigsberg with a career similar to that of Spielmann.

Sigismund F. Hermbstaedt (1760-1833). Successor of Neumann at the Prussian Royal Court Pharmacy, Berlin and as a lecturer in chemistry at the Collegium. Regarded as one of the founders of agricultural chemistry. He showed de Cagaget 'salt deviation' which he had found in an alcoholic extract of cinchona bark to be an 'alkaline salt of an acid', to which another apothecary, Friedrich Christian Hoffmann of Leer gave the name 'Quina-acid'.

The Rose family of Berlin. Valentine Rose, senior (1736-1771) originator of a low melting point amalgam used in soldering.

Valentine junior, (1762-1807) the discoverer of inulin and the first to prepare sodium bicarbonate by treating sodium carbonate with carbon dioxide; Heinrich Rose who proved niobium and tantalum to be two distinct elements.

Martin Heinrich Klaproth (1743-1813). For a period worked at the Rose pharmacy and later became chemist at the Royal Prussian

Academy of Science. Wrote papers on apatite, barium carbonate and wolfram; identified the elements of cerium, tellurium, titanium, uranium and zirconium.

Berzelius called him "Europe's greatest analytical chemist."

Friedrich Stromeyer (1776-1835). Professor of pharmacy at Göttingen university, and inspector-general of pharmacies.

Brilliant analyst and discoverer of cadmium, and the starch/iodine reaction.

Friedrich Wilhelm Adam Sertürner (1783-1841). In his pharmacy at

Paderborn he isolated 'morphium' from opium and was the first to recognise its alkaline nature. He formed salts from it of which the acetate proved the most important at that time. He believed these and similar salts might be the active principles of plant remedies, and carried out physiological experiments on himself.

Both he and Pelletier arrived at the same conclusion that biological action could be used to follow an active constituent through complex extraction processes.

Friedlieb Ferdinand Runge (1794-1868). A manufacturing pharmacist.

Isolated caffeine from coffee beans independently from Pelletier and Robiquet. Wrote a classic paper on the products of coal distillation, including aniline and phenol.

Denmark

Hans Christian Oersted (1777-1851). Son of the pharmacist of Rudkjöbing.

Graduated in pharmacy and managed the Løve Apotek in Copenhagen; became a teacher of natural sciences and chairman of the commission of pharmaceutical examiners.

Isolated piperine from *Piper nigrum*, worked on the

metal chlorides and is now thought to have even obtained an impure aluminium. Was the discoverer of electro-magnetism.

Russia

Karl Karlovitch Klaus (1791-1864). Was a working pharmacist for many years before he left pharmacy for chemistry; became a lecturer in chemistry at Dorpat University. Was the discoverer of ruthenium; also an accomplished botanist and wrote an encyclopedia of the plants of the Volga area.

Sweden

Carl Wilhelm Scheele (1742-1786). Apothecary in Köping. He investigated manganese and some time before 1773 had isolated oxygen and rather later chlorine and arsenic. He was particularly attracted to the study of organic acids and isolated tartaric, citric, lactic, benzoic, gallic, and oxalic acids to mention some. He discovered glycerin and lactose and the means to produce Prussian Blue.

It is important to realise that most of these men were not full time academics but were working pharmacists. Scheele and Sertürner conducted their experiments in the apothecary laboratories, Klaproth was fifty before he went to the Prussian Academy of Sciences, Caventou and Pelletier both ran pharmacies as well as being professors of pharmacy at the Paris school of pharmacy.¹ In England the story was very different.

Owing to his widowed mother's straitened circumstances young T.N.R. Morson, born at Stratford-le-Bow in 1800, was apprenticed when only fourteen to Charles Dunn, a retired army surgeon who kept a shop in

Old Fleet Market. Dunn showed little interest in the boy and it was fortunate for him that a year later the stock in trade, goodwill and apprentice were all transferred to Henry Morley, later senior warden of the Apothecaries' Company. Morson disliked surgery but was consumed with a desire to study chemistry. He went to classes given by Marcet and William Allen at Guy's hospital and to those of W.T. Brande at the Royal Institution. The new developments in phytochemistry in France and above all Sertürner's paper of 1817 were creating a considerable stir in England, so on the death of his mother in 1818 he took the wise step of moving to France to advance his education.

He went to work in the pharmacy of L.A. Planche in the Rue du Mont Blanc, Paris. Planche was one of the editors of the Journal de Pharmacie and an able chemist so that Thomas Morson must have learnt much in the long hours he is said to have worked from six in the morning to midnight. In 1821 he returned to England and succeeded to the shop in Fleet Market as his old master had decided to devote himself entirely to medicine. There in the back premises of his shop Morson was the first man in England to manufacture and sell quinine sulphate and morphine salts. Within two or three years he moved to larger premises at No 19 Southampton Row. All his life he retained his interest in the new developments in theoretical chemistry and after the publication of Reichenbach's experiments on wood tar he established a works in Hornsey Road for the manufacture of creosote.²

Dumas, born in the same year as Thomas Morson, one of France's finest chemists, began his career first with an apothecary in the little town of Alais and then in Geneva where he worked in the laboratory of the pharmacy of Le Royez. In his memoir with Dr. Prevost on the physiology of blood as is described as 'Élève en Pharmacie'.³ In this he had a great predecessor, Humphry Davy.

Anne Treneer writes that the Davy s were not unlettered or boorish people though it is not recorded that any achieved intellectual eminence.⁴ Davy's father was brought up by his uncle, Robert Davy, a close friend of Dr William Borlase, rector of Ludgvan, vicar of St. Just and renowned antiquarian, but it is likely that the strongest influence in Humphry's young life came from his mother's adopted father John Tonkin, surgeon and apothecary. While he attended the Latin School at Penzance the future chemist lived with Tonkin.

John Davy, Humphry's younger brother (by twelve years) wrote that he particularly remembered Tonkin's peculiar dress, " ... that of the professional gentleman (by profession he was a surgeon), then passing away, the full wig, the sleeve and breast ruffled-shirt, the three cornered hat, buckled shoe etc. ... "⁵ In the February following the early death, in 1794, of Humphry's father, John Tonkin paid the sixty guineas premium for young Davy to be apprenticed to John Bingham Borlase, surgeon and apothecary of Penzance. John Bingham was the great nephew of Dr William Borlase and was a relation of Tonkin himself.⁶

Little is known of Borlase's practice but he did come from a family with a leaning towards medicine and pharmacy. John Borlase of Pendeen and Castle Horneck, member of parliament for St. Ives had nine sons, of which the antiquarian William was the fourth and the seventh, John, became an apothecary. Between the two brothers in age was George, (baptised in 1697), who had three sons Walter, George and William. Walter, the second son, was apprenticed to Robert Philips of Plymouth, apothecary, for seven years in 1742, when he was sixteen.⁷ Walter returned to Penzance to practice and calling himself 'surgeon' or surgeon etc.' took as apprentices William Rawles and Henry Davies.⁸ He married Mary Tyeth and they had six sons and four daughters, of which John Bingham was the first son. John was for a while apothecary.

to the Bristol Royal Infirmary which had been founded in 1735; a rumbustious young man he succeeded in setting the grave hospital administrators and physicians by the ears. He sided with Abraham Ludlow, a physician and former surgeon and apothecary at the institution with whom the other physicians had a feud, and when they issued instructions that Ludlow's prescriptions were not to be dispensed in the hospital, sent them out to John Till Adams, a Quaker dispensing chemist in the town. Only after an unseemly wrangle did Adams manage to obtain payment which he immediately donated to the hospital funds.⁹ Borlase left soon after this episode but certainly the period he spent at Bristol must have given him a greater width of experience than many country practitioners. He joined his father in practice in Penzance and the firm was known as Walter Borlase & Co. or Messrs. Borlase & Bingham Borlase, surgeons, or surgeons and apothecaries. As apprentices they took in 1782 James Wearn and four years later Henry Borlase.¹⁰ Henry, born 1765, was the son of Walter's older brother George, who had the usual large Borlase family of seven daughters and six sons.¹¹ After Walter's death the partnership became Messrs. Borlase and Berryman, surgeons.¹²

It is unlikely that Humphry Davy learnt much chemistry from the Borlases but he had the friendship of Gregory Watt, sone of the engineer, who for some time was a boarder with Mrs Davy, and Davies Giddy of St Erith. Watt had read chemistry and geology at Glasgow University, and Giddy (who afterwards took the name of Gilbert) was a graduate of Pembroke, Oxford. The latter, rather older than Davy, was a fine scientist and had a well furnished library, he also took him to Hayle Copperhouse, where in Mr Edward's house Humphry saw for the first time a well equipped laboratory.¹³ Both Watt and Giddy were friends of Dr Beddoes, one as a patient and the other as a fellow member of Pembroke. Thomas Beddoes, M.D. had been reader in chemistry at Oxford from 1789-92

but his extreme Jacobin views wrecked any prospects of a university career.¹⁴ Through the work of Priestley he became interested in the application of pneumatic chemistry to medicine and at Clifton founded his Pneumatic Institution. It was through Gregory Watt that Beddoes came to read Davy's essays on heat and light and became his correspondent. He was so impressed by the young man that in the autumn of 1798 he offered him a post at the proposed Institution where he would be able to continue his medical education and at the same time establish a laboratory to test the value of 'factitious airs' or gases in the treatment of disease.

John Tonkin was highly suspicious of Beddoes both as a doctor and a politician but Borlase was open-minded and released Davy from the last eighteen months of his five year apprenticeship. The Institution proved a failure but for Davy it was a success as he came in contact with many of the great men of the day. In 1801 on the invitation of Count Rumford he was offered the post of assistant professor of chemistry at the Royal Institution and director of the laboratory. Beddoes was willing to release him and Davy's rise to fame was thereafter rapid.

After his marriage in 1812 Davy was made honorary professor of chemistry and director of the laboratory. His old position was filled by William Thomas Brande who retained the office for many years. Although an uninspired speaker he was a man of solid worth and the following year he became professor of chemistry and materia medica, as he styled himself, at the Society of Apothecaries.

Brande came from a long line of apothecaries, most of them royal apothecaries at the courts of Hanover and London. His great uncle Christian Heinrich Brande (1701-51) appears to have crossed the North Sea with his uncle, Ernst Augustus Jäger, son of Christian Jäger

court apothecary in Hanover, in 1717.¹⁵ Uncle and nephew were naturalised in 1723. Jäger first established his practice in St. James' Street, and then in 1734 moved to the fashionable nearby Arlington Street. The censors of the College of Physicians described his shop as being, 'extraordinary and very curious', 'curious' being used in the eighteenth century sense of the word as being 'scientific'. Brande lived next door. After Brande and Jäger's deaths in 1751 and 1752 respectively, the practice was continued by the Brande family until 1835.

For nearly a century the Brandes commuted between Hanover and London, holding positions as court apothecaries in both countries. Jäger took Christian Heinrich's brother, Augustus Hermann, into partnership with him in Hanover in 1740, thus it is understandable that as Christian had predeceased Jäger by a year, that Augustus should come over to London in 1752 to carry on the flourishing Arlington Street practice. In a curious reversal Augustus Hermann's eldest son, Augustus Eberhardt (Everard), who was born in Germany in 1746, after medical studies in London and obtaining an M.D. at Göttingen, returned to London in 1772 to continue the English line, whilst his younger brother Johann Conrad, born in England in 1754, went to take over the Hanoverian connections. Everard was not naturalised until 1784.

Their father is credited with research into the chemistry of alcohol but it was Everard who showed a far greater interest in pharmaceutical investigation. His particular field was pharmacognosy and published a paper on angustura bark in 1791. His shop was still run to a high standard and the censors in 1798 pronounced it to be 'very good'. This would be in the days when Friedrich Accum worked there, for it was not until the next year that Accum set up on his own.¹⁶

Augustus Everard trained at least three apprentices, all of whom would appear to be of at least partial foreign origin; they were John Krake in 1779, John De March Doratt in 1787 and Peregrine Fernandez in 1792.¹⁷

Within a year of his return from Hanover Augustus had married Anne Thomas. They had six children, three boys and three girls. The eldest son Everard Augustus, born 1776, ran the practice from 1801 when his father retired to Chiswick. He had studied at St. George's and became a member of the Apothecaries' Society by redemption in 1801. He does not seem to have had any inclination towards research or experimentation, indeed according to his younger brother, William Thomas, he actively discouraged him. William wrote, "I was now full of ardour in the prosecution of chemistry; although my brother, whose apprentice I was, and in whose shop ... I still worked and passed a large part of my time, threw every obstacle in the way of my chemical progress,"¹⁸ an echo of Jöns Jacob Berzelius' cry only a few years earlier when his apothecary uncle Daniel Berzelius in Jönköping refused him admission into his pharmacy for purposes of chemical experimentation.¹⁹ In spite of this discouragement there is no doubt young William grew up in a stimulating scientific and intellectual atmosphere. The strongest influence on him however was not his father or the family friend Friedrich Accum but Charles Hatchett F.R.S. An influential figure in the scientific world, a chemist and mineralogist of note, he gave Brande the inestimable boon of the run of his laboratory.

In an interesting comparison between the careers of Davy and W.T. Brande, Dr. Spiers has written, "Both contemplated entering the medical profession and were accordingly apprenticed to apothecaries ... Both were initially associated with medical men, were fired with enthusiasm

for pure science, did work in the medico-chemical field, ... became fellows of the Royal Society at an early age ... Brande had a good middle class origin and the advantage that this gave ... He was the embodiment of the Victorian virtues of industry, integrity, public service and domesticity ... Davy on the other hand, started lower down the social scale. When he came to London he lacked polish, but he rose high. He certainly did not work so hard. He worked when the spirit moved him and his researches were marked by imagination and inspiration.²⁰ It is ironic to note what Sir Humphry's brother John, a physician, wrote of him, "Mr Brande very much disappointed my brother ... He was mercenary and had no lofty views, he had come from the counter, his father was an apothecary, and he was more fitted for it than for a professor's or secretary's chair."²¹ John Davey was conveniently forgetting that their widowed mother had been forced to run a millinery business and that their maternal grandparents had had a mercer's shop where John Tonkin had lodged.²²

How much can justifiably be claimed for English pharmacy in the development and subsequent work of Davy, W.T. Brande and Thomas Morson is doubtful. Mr Edward's laboratory at the Hayle Copperhouse was far superior to that of Bingham Borlase's; Brande's background was at least as much Hanoverian as it was English, and it is probable that Uncle Johann Conrad's court pharmacy at Hanover was of far greater stimulus to him than that of his unsympathetic brother;²³ Thomas Morson's fine chemical works was firmly based on the discoveries of the French pharmacists. A better case can be made for the Henry family and for William Watson.

Watson's claim to fame in his own day was in fact not as a chemist but as a botanist and physicist, nevertheless it is perhaps not

totally irrelevant to discuss here his contributions to physics.

He was born in 1715 and was apprenticed to an apothecary called Thomas Richardson in 1731.²⁴ Immediately he was out of his time he set up in practice in Aldersgate Street. His interests first lay with botany but it was not long before his enquiring mind turned to the investigation of the newly discovered phenomena of electricity or as they would be termed today, electrostatics. He was elected to the Royal Society in 1741 and four years later received the Copley medal for his researches, an award which was given to Benjamin Franklin for the same subject in 1753. Watson's laboratory became a fashionable resort for members of the court and others to see his more spectacular experiments.²⁵

He read some 62 papers to the Royal Society which were subsequently published, about half of which were on his own speciality. He is seen to be a careful, systematic and observant experimenter, and made such valuable if not momentous observations as that electrical discharges are not affected by colour as some averred, or that an electric field can pass through glass even through more than one glass separated from another by a considerable air gap, or that electrostatic attraction can overcome the force of gravity in light bodies. He was in close contact with the Continental experimentors such as Le Monnier and the Abbe Nollet of Paris, Professor Musschenbroek of Leyden, Mr. Allamand and Professor Bose of Wittenberg, and excelled as a communicator of their researches to the Royal Society.

He advanced along with Nollet and Bose in their belief that Du Fay's dualistic theory of two types of electricity should be replaced by the unitary one in which bodies could have an excess or a lack of electricity. He wrote in February 1746, "This attractive Power of

Electricity acts not only upon Non-Electrics [conductors] as Leaf gold, silver, thread and such, but also upon Originally electrics [insulators] as silk, dry Feathers, little pieces of glass and resin: It attracts all Bodies, that are not of the same standard of Electricity (if I maybe allowed the Expression) as the excited Body from which it proceeds."²⁶

In October of the same year he quoted Noller and Bose as saying that electricity was present in all bodies and that "this matter tends to an Equilibrium and endeavours to occupy those spaces in Bodies which have not their necessary Quantity", in which he agreed with them and so differed as he wrote himself, from such highly respected earlier physicists as "...Gassendus and Des Cartes."²⁷

He was generous in his praise of the significant work of others. Stephen Gray (died 1736) found that charges could be transmitted along, or induced into, very long lines of suitably supported thread; he discovered that charges leaked away from fine copper filaments whilst silk thread did not allow this to occur, and thus showed the fundamental difference between insulators and conductors.²⁸ Gray paved the way for Mussechenbroek's invention of the Leyden jar or first capacitor.

Watson was well aware of Gray's work and wrote, "You could, by stopping the electricity, excite non-electrics [conductors] ; and by accumulating their Power, make them exert more Force than originally electrics [insulators] would at any Point of Time, ... [which] capital discovery of the late Mr. Gray ... is to be regarded as the basis upon which all the present improvements of our Knowledge of electricity are founded and till which Discovery ... little Progress was made."²⁹ In 1753 he summarised the recent discoveries by saying, "Since Mr Gray discovered that bodies must be insulated to communicate to them a perceptible electric virtue ... This thought [of placing iron bars in the sky against lightning]

could not have happened but to those who had taken notice of the analogy between lightning and electricity ... and no one could think seriously upon this analogy but since the discovery of the experiment of Leyden in 1746."³⁰ He made these remarks on the occasion of reading a letter from the Abbé Nollet in which the Frenchman defended certain of his own views and refuted Benjamin Franklin's assertion that " ... electrification of pointed bodies is a proof of lessening the matter of thunder." Watson faithfully translated his old correspondent's views but it is obvious he was far from being fully in agreement with him and stated that " ... the discoveries made in the summer of 1752 ... will make it memorable in the history of electricity."³¹

Watson was a great protagonist of the use of lightening conductors particularly for gunpowder magazines and ships at sea.³² He was asked to sit on the committee set up in 1772 to decide whether a pointed or a rounded rod was the better as a lightning conductor; he with Henry Cavendish and John Robertson came down firmly for the former.³³ By this time William Watson was no longer an apothecary. In 1757 he gained M.D.'s from both Halle and Wittenberg universities and was disfranchised from the Society of Apothecaries. He moved from Aldersgate to Lincoln's Inn Fields, became a licentiate of the College of Physicians after examination in 1759 and was elected fellow 1784.

It is interesting to note that Watson's Aldersgate practice was taken over by Timothy Lane, apothecary and FRS. It is probable that they were close friends as he too was interested in electrical apparatus and sat on one of the committees in the famous lightning conductor controversy.³⁴ He is better known for his work on the rusting of iron. In his experiments Lane demonstrated the two essentials of rusting, that iron is dissolved to a colourless solution by dissolved carbon

dioxide and that this solution deposits a yellow rust on exposure to air.³⁵
 He was supported in his views by the great Cavendish who two years earlier had shown that chalk and magnesia were also dissolved by 'fixed air'. In his own profession he rose to be Master of the Company in 1801, probably invented the glass graduated minim measure and gave lectures in materia medica.³⁶

Aldersgate Street would seem to have held a special attraction for those with a scientific bent. It was here that James Petiver had his pharmacy at the sign of the White Cross and where John Maud the well known chymist lived for many years at the sign of the Golden Key.³⁷
 R. Myddleton Massey, extra-licentiate of the College of Physicians and later M.D. of St. Andrews, wrote to Petiver, probably about 1714, to say that he would be pleased to see him at Wisbech and added, "If you please you may ask Dr. Thorpe for 17s. and Mr Maud the Chymist in your Street I will order to make it up to 30 for a plate in your Gazophylacium when you please to deliver him the piece ..."³⁸ Maud was made an F.R.S. in 1738 and two of his papers were printed in the Philosophical Transactions. After reading or perhaps seeing Sir James Lowther's experiments with 'air' which issued from his coal mines, Maud decided that the 'air' was the same as that which is given off when metals are dissolved in acids. He wrote, "It is very well known to every one versed in Chemical Affairs that most metals emit great quantities of sulphureous vapours during this effervescence which they undergo in their solutions in their respective menstrua or solvents. Of these Fumes Iron emits a great Quantity whilst dissolving in oil of Vitriol, which are very inflammable ... " He collected some of this 'fictitious air' in two bladders and demonstrated its similar properties at the Royal Society at the same time as

Sir James showed those of fire-damp. Maud believed that the production of this gas gave the explanation for earthquakes and volcanic eruptions.³⁹

His second paper concerned oil of sassafras. During a severe frost the oil had thrown out some transparent large hexagonal crystals which surprised Maud and set him speculating on the difference between 'fluidity and solidity'. A note at the end of the report pointed out that Dr. Neumann had had a like crystallisation from oil of thyme which he had called 'Camphora Thymi'.⁴⁰ Maud's chemist's shop expanded and after his death a Boulton and Watt rotative engine was erected in it in 1797 where it continued working until 1885. The firm ultimately became the Atkinson's Chemical Works.⁴¹

Of the scientific Henrys of Manchester Thomas Henry (1734-1816) was the first. He was born in Wrexham the son of a dancing master and possible school master who some have thought to be the illegitimate son of Viscount Bulkeley.⁴² Thomas was educated at Wrexham Grammar School and like his younger brother it was intended that he should study at Oxford; it has been recorded that the family resources were at the last moment thought to be inadequate to the task and so he was apprenticed to a Richard Jones, a leading apothecary of Wrexham. Mr Jones died suddenly in 1752 whereupon young Thomas was sent to complete his time in Knutsford. His new master was Henry Penny⁴³. The two Pennys, Robert and Henry of Nether Knutsford trained many apprentices; samuel Hassey (1716) Ralph Malben (1722) and Thomas Hollins (1733) were apprenticed with Robert Penny, as were Gwillyn Bissell (1757), George Bew (1761) Henry Penny (1766) and Peter Penny (1769) with Henry.⁴⁴ When Thomas was out of his time he became an assistant of Mr Malbon an apothecary of Oxford, probably the late apprentice of Robert Penny.⁴⁵

Later in life Thomas Henry said his interest in chemistry was first aroused by reading Boerhaave's Elementa Chemiae. The Farrars write that in England at that time, " ... Boerhaave and the dispensary were the best education in chemistry he could have had; no university could have taught him more."⁴⁶ The same authors suggest that he was, "no doubt much chagrined" at the time of his binding, and that later he " ... fulfilled his thwarted ambition to go to Oxford" a view which is likely to have been their own rather than Henry's. When in Oxford he took the opportunity of attending a course on anatomy, and what was to prove of greater monetary worth, became acquainted with an apothecary Samuel Glass, who had a small magnesia factory on Cowley Marsh. Glass made a particularly fine variety of magnesia the secret of which Henry learnt by methods which may or may not have borne inspection.⁴⁷ Mr Malbon offered him a partnership but he preferred to return to Knutsford, where in 1760, he married Mary Kinsey a probable relative of the Pennys.⁴⁸ Their first child was born there in 1763 and the following year they migrated to Manchester which was just about to leap into prominence as an industrial and progressive town. He established himself in the fashionable district of St Ann's Square and seems to have rapidly made a success of his practice.⁴⁹ In 1772 he began magnesia production. At first like Glass he made magnesium carbonate but soon found that the oxide was even more satisfactory; weight for weight it was more effective and more important and did not lead to the distressing evolution of gas. He also discovered that he could produce an easily dispersible powder if he heated the carbonate in a certain fashion, which was kept a closely guarded secret.⁵⁰ It had a tremendous vogue and was manufactured until 1933 when the firm of T. & W. Henry was sold to British Drug Houses.⁵¹

Henry played a major part in the founding of the Manchester Literary and Philosophical Society in the 1770's, which was probably a copy of the Lunar Society of Birmingham. In 1783 it was decided to start formal lectures in a 'College of Arts and Sciences' and there in the autumn of that year Thomas Henry taught, 'Chemistry, with a reference to Arts and Manufacture.'⁵² He remained faithful to his own text-book, Boerhaave, so that his lectures had an old fashioned air, although he was well aware of Lavoisian theories as he had translated Lavoisier's Opuscles. Emphasis was laid on the practical rather than the theoretical aspects of chemistry. In a letter he wrote to Benjamin Rush in 1784 he said that a Mr. Bew, 'a gentleman of my own Profession' was delivering the lectures on the fine arts. This gentleman was almost certainly George Bew who had been an apprentice of Robert Penny and the same George Bew of Manchester, apothecary (or apothecary and surgeon) who took as apprentices William Oldham and John Smith in 1776 and John Barlow in 1781.⁵³

The new college was not a success and seems to have ceased to function in 1788, but two years earlier a dissenting academy, the Manchester Academy, had been founded and Henry, together with his son Thomas, lectured in chemistry there until 1794 when the son emigrated to America. Thomas Henry, in the midst of his busy life, also carried out chemical research, none of any outstanding innovative value but what might be described as 'sound'. Like his younger son William he was attracted to pneumatic chemistry. He was particularly concerned with the relationship of carbon dioxide to putrefaction and fermentation but was unaware that the activity of micro-organisms was taking place and so confusing his conclusions. He also carried on experiments, first of all in conjunction with Dr. Percival, and

then alone, into the interaction between 'fixed air' and green plants. Their results contraverted those of Joseph Priestley's but it is probable that the differing observations were due to the fact that neither party had any conception of the role of sunshine in photosynthesis. He was first and foremost a practical chemist. He became active in the important textile trade, being one of the first people in Britain to use chlorine for bleaching cottons and developed a 'milk of lime', a forerunner of bleaching powder. He was also very interested in the dyeing industry. He seems to have had a good appreciation of the action of a mordant and was desirous of putting the craft on a proper scientific and chemical basis.⁵⁴ He had a great faith in the uses to which chemistry could be put and continued to be interested in new theories. Almost reluctantly, probably because of his friendship with Priestley, he came to fully accept Lavoisier's 'new chemistry' and certainly by 1797 had parted company with Priestley's tiresomely obstinate views.⁵⁵

Thomas Henry was certainly no great chemist but his son William comes nearer to being placed in that category. Unlike his eldest brother Thomas who was first trained as a chemist and was sent to a Dr Lyon of Liverpool to learn surgery and midwifery, William went straight to Edinburgh as a medical student in 1797. He had been there only a year when his father re-called him in order to help with the magnesia works. In this he was successful and two years later added the manufacture of soda by a secret process which was probably the same as that of Leblanc.⁵⁶ In 1805 he returned to Edinburgh and completed his medical studies.

William must be given the credit for three important pieces of work. He conducted work on the solubility of gases, (probably in the

first place inspired by his manufacture of soda-water) which resulted in his law relating solubility to pressure. Secondly he and his father taught John Dalton most of the chemistry he learnt when he first came to Manchester; William and Dalton were close friends for a long period and there seems little doubt that the chemical discussions between them greatly helped Dalton to his conclusions which led to his atomic theory.⁵⁷ Thirdly he carried out much tedious but essential work on the analysis of coal gas and its variation in composition.⁵⁸

The next generation showed signs of being equally prominent in the chemical field. William Charles was a pupil of Dalton and studied medicine at Edinburgh. His earliest research was on the physiology of the nervous system, but like his father and grandfather before him he then turned from medicine to chemistry. In 1835 he went to Germany; there he went to Rose's laboratory in Berlin and then to that Mecca of all aspiring chemists, Liebig's laboratory in Giessen. A year later he returned to England full of plans to start a similar institution in England. Within weeks his father had committed suicide and all ambition, scientific or otherwise, died in the shocked mind of his son Charles.⁵⁹

William Henry had been greatly troubled by the failure of the younger generation to enter the field of science and continue in the direction so ably pointed out by Dalton and Davy. In a letter he sent to Charles Babbage in 1830 he wrote, "What may be the actual decline of science in this country, I am but imperfectly qualified to judge. In Chemistry, it unquestionably exists to a very considerable extent. Young and active experimenters have not started up here, as on the Continent, to fill the places of those who, from

various causes, have finished their scientific career. Rarely indeed do our periodical journals announce a chemical discovery of any importance, while some of the continental ones are rich in original and excellent matter. Geology indeed, is the only science, which, in England, exhibits a healthy aspect and a vigorous youth."⁶⁰

Justus Liebig visited Charles Henry a year after William's death during which time he travelled the length and breadth of Great Britain. He wrote to Berzelius that "England ist nicht das Land der Wissenschaft" and that "die Chemiker schämen sich Chemiker zu heissen, weil die Apotheker, welche verachtet sind, diesen Namen an sich gezogen haben."⁶¹

The root cause of this state of affairs was, as Liebig perceived, due to the lack of adequate teaching. A hundred years earlier the author of The London tradesman wrote, "The Education of a Chymist ought to be liberal and unconfined: But above all he must be Master of Latin; and he perhaps would find his Time well bestowed in learning the German Tongue. The Germans are by much the best Chymists in Europe; and the best Treatises on that Subject are either writ in Latin or High German ... We have few else [i.e. English translations of Boerhaave and the works of Boyle] in the English Tongue that make any Figure; therefore the young Chymist must have recourse to Foreigners, and be able to read them in their own Language."⁶²

The world of the English apothecary contributed comparatively little to the science of chemistry. Between Robert Boyle and Humphry Davy lies Joseph Black but no claims can be made for his valuable contributions. He was an Ulsterman, born in France, who was educated in Belfast and the university of Glasgow, and unlike his friend and mentor Dr. Cullen, spent no intervening period of study with apothecary or surgeon. To quote from Campbell again,

"However, the Practical Chymist, that is, those who go under that Name in this City, are far from being Adepts in this Study: They follow only a few general Rules in preparing Medicines, and are seldom employed about any Part of their Branch which does not immediately depend upon the Practice of Physic ..."⁶³

Dr. Crellin however has shown that British medicine and pharmacy have made significant contributions to the development of chemistry in the period immediately prior to the general acceptance of professional chemists through education and the search for more uniform or new medicines.⁶⁴

2

Notes and references.

1. The resume was compiled from:-

W.R.Brett, 'Parmentier', Chem. & Drugg., 1951, 155:830 -1.

J.Jaramillo-Arango, The conquest of malaria, London,

W.Heinemann, 1950, p.87.

H.B.Rasmussen, 'Hans Christian Oersted, 1777-1851', Chem. & Drugg.

1951, 155:309-10.

M.Schofield, 'Early French pharmacists', Pharm. Journ., 1945,

155:13-14.

M.Schofield, 'A forgotten Russian pharmacist', Pharm. Journ.,

1946, 157:135.

M.Schofield, 'Klaproth: pharmacist and famous analyst',

Pharm. Journ. 1946, 157:376.

M.Schofield, 'Joseph Louis Proust, 1754-1826', Pharm. Journ.,

1954, 175:69-70.

M.Schofield, 'Vauquelin, the versatile chemist, 1763-1829',

Pharm. Journ., 1963, 190:453-4.

M.Schofield, 'Friedrich Stromeyer', Chem. & Drugg., 1967, 188:160.

P.Stechl, 'Caspar Neumann: an early teacher of pharmaceutical chemistry', Pharm. in Hist., 1970, 12:51-6.

W.A.Tilden, Famous chemists, the men and their work,

London, Routledge, 1921.

T.D. Whittet, 'Some contributions of pharmacists to plant

chemistry', Aust. J. Hosp. Pharm., 1973, 3:13-20.

T.D. Whittet, 'Some contributions of pharmacists to analysis',

Pharm. Journ., 1973, 211:536-541.

2. 'Our portait gallery: Thomas N.R.Morson', Chem. & Drugg., 1870,
11:142.
3. W.A.Tilden, op.cit., p.206.
4. A.Treneer, The mercurial chemist, London, Methuen 1963, p.5.
5. Ibid., p.14 quoting J. Davy's Fragmentary remains of Sir H. Davy (1858)
6. William Borlase's brother George, married twice, firstly
Mary Tonkin and secondly Philadelphia Bingham.
William's sister Elizabeth also married a
Tonkin.
7. Inland Revenue apprenticeship records. I.R./1/50, f.184.
8. I.R./1/26, f.160; I.R./1/59, f.209 and I.R./1/60, f.*82, this
entry was made twice, once in October 1776 and
again a year later in October 1777.
9. P.Cooper, 'Some Bristol contributors to science, medicine and
technology', Pts. I & II,
M.& B. Pharmaceutical Bulletin, 1957,
6:8:90,120.
10. Inland Revenue apprenticeship records. I.R./1/62, f.121;
I.R./1/33, f.3.
11. W.C.Borlase, The descent, name and arms of Borlase of Borlase in the
county of Cornwall, London, G.Bell & Sons.
1888, Pedigree. John Bingham's younger
brother Walter married Francis Woodis, half
sister to the two admirals, Edward and
Israel Pellew, and to Samuel Humphrey Pellew,
apothecary and surgeon.
12. I.R./1/38, f.*73, March 1800.
13. Treneer, op.cit., p.25.

14. E. Robinson, 'Thomas Beddoes, M.D., reader in chemistry in the university of Oxford, 1789-92', Ann. Sci., 1955, 11:137.
15. This and subsequent references to the Brande family are taken from C.H.Spiers, 'William Thomas Brande, leather expert', Ann. Sci., 1969, 25:179-201
16. The censors visited Accum within a month of starting and pronounced his shop to be "Well arranged and bids fair to be a capital shop. The master very scientific and well informed."
See Spiers, op.cit., p.184.
17. Inland Revenue apprenticeship records, I.R./1/30, f.86.;
I.R./1/33, f.151.; I.R./1/35, f.^x48, April 1792.
In all cases A.E.Brande was referred to as an apothecary and never as an apothecary & surgeon.
18. Dictionary of national biography, VI:216-18.
19. Tilden, op.cit., p.134.
20. Spiers, op.cit., p.199.
21. A.A.Tulley, 'Chemical studies of W.T.Brande, 1788-1866', unpublished M.Sc. thesis, University College, London, 1970-71, Senate House Library,
reference 47 in which he quotes from 'A small green notebook' held at the Royal Institution (H.Davy colln., Box 14, Item 14 J.)
22. Treneer, op.cit., pp.17,7.
23. Spiers, op.cit., p.186.
24. Apothecaries' Society court minutes, Ms. 8200/6, f.6lv. 6 April 1731,
"William Watson, son of William, late of

St. Sepulchre's, Middlesex, corn chandler,
 ... apprenticed to Mr Thomas Richardson for
 8 years".; f.138v. "William Watson apprentice
 of Thomas Richardson and turned over to
 Mr Warden [John] Lyde who had served 7 years
 and 2 months, made free on paying fine of
 two guineas."

25. The dictionary of national biography, LX:45-47.
26. Philosophical transactions of the Royal Society, 44:41-48, see p.41.
27. Ibid., 44:704-49, see p.749.
28. A.R.Hall, The scientific revolution, 1500-1800, London, Longmans,
 Green & Co. 1962, 2nd edition, pp.351-2.
29. Philosophical transactions of the Royal Society, 44:704-49, see p.731.
30. Ibid., 48:201-16, see p.210
31. Ibid., p.201.
32. Ibid., p.215.; 52:629.; 54:201.
33. Ibid., 63:66.
34. D.W.Singer, 'Sir John Pringle and his circle', Ann. Sci., 1948-50,
 6:127-180, see p.171.
35. T.M.Lowry, Historical introduction to chemistry, London, Macmillan,
 1926, p.108.
36. L.C.Matthews, History of pharmacy in Britain, Edinburgh,
 E. & S. Livingstone, 1962, p.281.
37. John Maud was already established at Aldersgate Street at the time
 of the visit of the censors of the College
 of Physicians in 1728.
38. British Library, Sloane Mss., Ms. 4067, f.48.

39. Philosophical transactions of the Royal Society, 39:282-5.
January 1735.
40. Ibid., 40:378-9. April 1737.
41. The rotative engine is to be seen in the Science Museum,
South Kensington.
42. W.V.Farrar, K.R.Farrar and E.L.Scott, 'The Henrys of Manchester',
Part I, 'Thomas Henry (1734-1816)',
Ambix, 1973, 20:183-208, see p.183n.
43. Inland Revenue apprenticeship records, I.R./1/51, f.*130, August 1753.
It was agreed that Henry Pennee (sic)
apothecary of Nether Knutsford should train
Thomas Henry for 4 years from 27 June 1752
on payment of £42 consideration money.
44. I.R./1/44, f.108; I.R./1/47, f.*125, August 1722.; I.R./1/13, f.168;
I.R./1/21, f.*62, July 1757.; I.R./1/54, f.78;
I.R./1/55, f.*190, May 1766.; I.R./1/57, f.*42,
November 1769.
45. Farrar et al., op.cit., p.185.
46. Ibid., p.185.
47. Glass also contributed to the Philosophical Transactions, 'Case of an
uncommon dropsy from the want of a kidney ...',
XLIV:733. Glass's magnesia still had a
market many years later as can be seen from the
following advertisement. "The Magnesia.
Prepared from the recipe of the late Dr. Glass
is the purest and most freed from saline and
heterogeneous particles of any magnesia now
made. Mr Delamotte last year assigned

all his interest in the above property to
E. Edwards, chymist, 67, St. Paul's Church yard,
by whom the Magnesia for the future will be
prepared according to the recipe of the
original proprietor Dr. Glass." See
The Sheffield Iris, 27 April 1830.

48. Farrar et al., op.cit., p.186.
49. Ibid., p.186.
50. W.V.Farrar, K.R.Farrar and E.L.Scott, 'The Henrys of Manchester',
Royal Institute of Chemistry reviews,
1971, 4:1:41.
51. Ibid., p.47.
52. Farrar et al. (1973), op.cit., p.193.
53. Inland Revenue apprenticeship records, I.R./1/29, f.^x42, November 1776,
I.R./1/29, f.^x45, December 1776;
I.R./1/62, f.40. At this period Thomas Henry
was also taking apprentices, for example,
Joseph Ollier. See I.R./1/29, f.^x100,
November 1777.
54. Farrar et al., (1973), op.cit., pp.198,199.
55. Ibid., pp.203,207.
56. Farrar et al., (1971), op.cit., p.42.
57. Ibid., pp.42,43.
58. Farrar et al., 'The Henrys of Manchester', Pt.4, 'Hydrocarbons and
the gas industry', Ambix, 1975, 22:186-204.
59. Farrar et al., (1971), op.cit., p.46.
60. Farrar et al., 'The Henrys of Manchester', Pt.2. 'Thomas Henry's sons',
Ambix, 1974, 21:179-207, see p.201.

61. Tilden, op.cit., p.193.
62. R. Campbell, The London tradesman, London, T.Gardner, 1747,
David & Charles reprint 1969, p.61.
63. Ibid., p.60.

c) MEDICINE

The advance of medicine, as much as that of the other scientifically orientated disciplines, in the first place, resulted from the Renaissance, and secondly from the scientific revolution. Except for the outstanding discoveries in anatomy by William Harvey, and the new techniques of surgery by surgeons of the quality of Ambroise Paré and Andreas Vesalius, progress was slow in comparison with astronomy, physics, mathematics, and even botany, which was a later arrival. The great Thomas Sydenham made many references to the work of the botanists who were so active in making collections, developing acceptable terminologies, and making systems based on morphology, which culminated in the achievement of the naturalist John Ray. Sydenham wrote that in order to effect cures, " ... all diseases must be reduced to definite and certain species like the phytologies of botanists."¹ The concept of a disease being a well-defined entity was foreign to medical practitioners before the time of Sydenham although the idea of a disease-producing organism causing a specific disease must have begun to slowly emerge after Thomas Moffet saw the itch-mite through a magnifying glass in 1590. The old humoral pathology took another body blow with the advent of quinine in the treatment of fevers. A specific for malaria, its obvious but delayed successful effect, without any apparent evacuation meant that it was impossible to slot into any theory based on that of the four humours. Sydenham was an advocate of the use of cinchona bark but it did not obtain real acceptance until Robert Tabor, apothecary in Cambridge, and the county of Essex and to the royal court, had developed a preparation which was really effective.

Sydenham, after a bare year and two months at Oxford, was voted an M.B. by Convocation in April 1648, principally because he was a

fervent supporter of the Parliamentarians. For the same reason he received one of the fellowships vacant as a result of the purge of fellows who had refused to take the Covenant. A few months later he was appointed senior bursar of All Souls, of which Dewhurst has written, "... his appointments are best regarded as belated military honours rather than academic distinctions; he was officially a medical don, though in fact a medical student."² He added, "Many of the new undergraduates were more interested in facts gained from observation and experiment than in the disputations and rhetorical displays which had pleased their fathers." Sydenham had no patience with medical education as taught at Oxford (or for that matter at Cambridge) and thought the taking of apprentices a far sounder practice.³ He can by no means be regarded as a product of the antiquated and apathetic medical schools of the English universities.

He did not settle down in practice as a physician until 1655 or 6, when he bought a house in King Street, Westminster. At this stage of his career it is obvious that his interests were more political than medical.⁴ It was not until after the Restoration and the death of his fanatical brother, Colonel Sydenham, a disgraced man, did he seriously turn his mind to medicine. After his return to Oxford for a second time in 1651 or 2 he became friendly with Robert Boyle and at his urging began a study of the all too prevalent epidemics in London. He classified fevers into three broad groups: continued, intermittent and small-pox with which he included measles; he studied their natural history by means of his own painstaking and accurate case histories.

At this time he thought it wise to regularise his professional position by becoming a licentiate of the College. In 1666 his

Methodus curandi febres was published and greatly enhanced his reputation. His treatment was effective and may be described as sensible empiricism. In spite of his erroneous hypothesis of the aetiology of smallpox he appears to have been remarkably successful, so much so that he regarded the illness as 'the most slight and safe of all other diseases'. His treatment was not elaborate which was the secret of its success. The patient was encouraged to stay out of bed for the first four days and then was prescribed a cooling regimen. The room was kept cool, the bed clothes light and he ordered copious fluids especially small beer.⁵ He was conscientious and sensible enough to vary treatment according to the patient's age and constitution, and with the type of smallpox. It seems likely that much of the reputation of both John Radcliffe and Thomas Dover was due to their adoption of Sydenham's new cooling regimen.⁶

A.H.Hall has written, "Surgeons being on a lower academic, social and intellectual level, [than physicians] to which they were firmly suppressed by the energetic corporate interest of the physicians, had far less opportunity to add to knowledge,"⁷ but in this he was not entirely accurate. In the context in which he was writing - botany, zoology, physiology - this may be largely true, but not of medical science. John Woodall, (1556-1643) first Surgeon-General to the East India Company (1612) and in 1616 appointed surgeon to St. Bartholomew's, was an innovator and particularly successful in amputations, but should rather be remembered for his treatment and, more importantly, prevention of scurvy. He wrote in his The surgeon's mate (1617), "The Chirurgeon or his Mate must not fail to persuade the Governour or Purser in all places where they touch in the Indies, and may have it, to provide themselves of juices of Oranges, limes or lemons, & at Banthame

of tamarinds. ... The use of the juice of Lemmons is a precious medicine and well tried, being sound and good; let it have the chief place, for it will deserve it."⁸

Richard Wiseman (1625-1686) is another surgeon who should not be ignored. Owing to ill health he was for long periods unable to practise and so he employed his time by writing his Chirurgical treatises, which constituted a record of his wide surgical experiences both afloat and ashore. As a surgeon he was outstanding but he made also notable observations on syphilis, a disease usually treated by surgeons rather than physicians. He showed that the treatment of affected pregnant women could result in the birth of healthy children, and he noted that apparently healthy mothers could bear syphilitic babies. He realised that tuberculosis could be implicated in scrofula and made the observation that hard and painful lymphatic tumours which were not inflamed could be cancerous and advocated leaving them severely alone.⁹

The story of the introduction of smallpox inoculation to this country in 1714 and its subsequent popularisation seven years later by Lady Mary Wortley Montagu is well known. From the earliest years it was recognised that inoculation smallpox was just as contagious as natural and that the disease could be spread by the practice, but few attempts to isolate the patients seem to have been made particularly in the early years. As the successes and dangers of inoculation became more apparent the operation was the subject of heated controversy and vacillating policy.

Dr James Jurin wrote, An account of the success of inoculation in Great Britain for the year 1726, in which he claimed that only 1 in 99 of inoculated children died of smallpox as compared with 1 in 14 of those

who were not, figures which were largely supported by Richard Mead in his De variolis et morbillis ... (1747), Mead's success with the six criminals of Newgate in 1722, and the survival of the five charity children inoculated at the instigation of the Princess of Wales, led to an increase in the practice but when reports of deaths, including some of Mead's patients and that of the Honorable William Spencer were heard there was a reaction. The town of Salisbury imposed a ban in 1723 in which it followed the widely publicised action of Boston in Massachusetts.¹⁰

In 1740 there was an exceptionally severe outbreak of the disease which led to the percentage of deaths from smallpox, expressed as a percentage of all burials, in some parishes being as high as 55.¹¹ The fear of the natural disease became greater than that of the dangers of inoculation so causing an increase in the preventative measure. An inoculation hospital was established in London in 1746, although there was still so much prejudice that patients were often abused when they were seen leaving the hospital. In 1756 the College of Physicians came out in favour of the practice, writing that they thought it was 'highly salutary to the human race.' In spite of this pronouncement the operation would seem to have been taken up with greater alacrity by the surgeons than the physicians. Claude Amyand, John Ranby and Caesar Hawkins, all royal surgeons, were also well known inoculators.¹² It is noticeable that the agreement to ban the operation for two years in Winchester made in 1758 in order to 'put an entire stop to the Distemper spreading' was made between the apothecaries and surgeons of that town.¹³

A family which gained a great reputation as inoculators were the Suttons; usually described as surgeons, there is little doubt that they

were in fact the usual apothecary/surgeon of the provinces. The father, Robert, lived at Debenham, Suffolk and in 1757 announced that he had developed a new, safe and infallible method of operation. In eleven years he was said to have inoculated 2,514 people with great success. He trained his two sons, Robert and Daniel, in his procedure, whereupon they opened an inoculation house near Ingatestone, Essex. They claimed that they could keep the illness resulting from inoculation under control by the use of certain medicines and a particular treatment but refused to divulge their secrets. In spite of the close questioning of their patients and analyses of the medicines, the secret was kept until 1796, when Daniel agreed to tell medical practitioners who lived at a distance, provided they handed over half their receipts.¹⁴

After Maitland the surgeon of the Constantinople embassy made his demonstration, one of the first to take up inoculation was Nettleton of Halifax. Within three months he had treated forty people. He was the first to prepare his patients by the administration of aperients, emetics and an occasional bleeding, and from then, it became the usual practice with every doctor developing his own procedure. There was great discussion as to the type of incision to be made, the site and the number, controversy also raged as to whether the pus should be 'ripe' or 'watery' or perhaps a dried scab. The Suttons recommended the very careful selection of patients from whom the matter was taken, the use of one puncture and that it should literally be skin deep (something already advocated by Hanby), the patient should be kept on a spare diet and before treatment be given a preparative powder followed by a saline drink and whilst the fever was upon him he was to have ample cool drinks and keep to the fresh air. A sensible regimen

which smacked of Sydenham's methods. People flocked to the Suttons and they claimed that they inoculated 17,000 people with only five or six deaths. It would seem that in the course of their work they had obtained and then perpetuated a strain of attenuated smallpox virus. Of as great interest as the Suttons are the Dimsdales also usually described as surgeons. The family is first located in Hoddesdon, Hertfordshire, in the person of Robert Dimsdale.¹⁵ His elder son, John, settled in the county town of Hertford and the younger, his namesake, crossed the River Lea to practise as a surgeon at Theydon Gernon. Robert the younger was an early convert to the Society of Friends, and was in trouble in 1663 for practising without a bishop's licence; nine years later (1672) he was sent to Hertford gaol for refusing to pay tithes. In 1684 he made a trip to America and before he left printed a pamphlet entitled "Advice how to use his medicines, which he chiefly designed for his old friends, who earnestly desired it of him before he left England." On his return to this country he appears to have settled in Bishop Stortford, probably with his son William who was a surgeon in that town.¹⁶

Robert's other son succeeded to his father's practice at Theydon.¹⁷ The practice of medicine within the Dimsdale family was a tradition which was strongly held. Robert had two nephews in Hertford, Robert and John, who were said to have M.D.'s;¹⁸ William's branch of the family gave rise to surgeons and bankers, whilst John of Theydon's son Thomas was destined to become the best known of all the family as well as the most famous of all inoculators.

Born in 1712 he was his father's pupil until John died whereupon he went to study under Joshua Symonds and John Girle, surgeons of St. Thomas's. He settled in Hertford where his cousin once removed

had left a high medical reputation. Unlike his grandfather his Quaker beliefs were not tenaciously held. His first wife, Mary Brassey, whom he married in 1741 was not a Quaker, and after her death he offered his services as a surgeon free of charge to the army in the rebellion of 1745. The following year he married again. His wife was rich and as he had inherited an ample fortune from his uncle Sir John Dimsdale he had no financial necessity at first to practise, but when his family increased he had to return to medicine. When he was 49 (1761) he graduated M.D. of King's College, Aberdeen.¹⁹ He became an exceptionally successful inoculator and his fame was such that John Fothergill recommended him to the Russian minister in London as the fittest person to carry out the inoculation of Catherine the Great and her family. Unlike the mercenary Suttons he published his methods for the benefit of mankind in 1767, from which it could be seen they bore a close resemblance to those of the Suttons.²⁰ Whether he had developed them completely independently or by rigorous questioning of the Suttons' patients had elucidated their secret is not known.

Owing to the contagious nature of inoculation smallpox Dr. Richard Beard of Worcester had told Jurin as early as 1726 that he would like to see established outside the city an infirmary for inoculation, but it is doubtful if any true isolation was ever enforced.²¹ By the 1750's private hospitals for the care of inoculated patients for five to six weeks were an established institution; usually they were owned by the inoculator and were under his sole jurisdiction. Possibly the earliest of these hospitals was that of Thomas Frewen (1704-1791) of Rye, Sussex. There he practised as an apothecary and surgeon and on the main road set up an inoculation hospital.²² In 1749 he published his The practice and theory of inoculation, in which he narrated his experience of 350 cases

in which there had been only one death. The type of pus used he believed irrelevant but he laid great stress on the constitution of the individual patient and preparative treatment was tailored to fit his needs. He advanced the theory that smallpox and many other diseases was propagated by animalcula hatched from eggs lodged in the hairs and pores of human bodies.²³ The treatise was put into Latin and on the strength of it he obtained an M.D. from Utrecht. In 1759 he published another carefully reasoned paper in which he showed that the development of smallpox after exposure to infection could not be checked by the administration of Aethiops mineral, which had been the opinion of Boerhaave. As a result of the fear which the local people had and his hospital he was in the end forced to move to Lewes.

Because of the controversy surrounding inoculation it is to be expected that the surgeons and apothecaries advertising their activities should place great emphasis on the safety of their particular mode of operation, as witness an advertisement in the Kent Gazette of 1-4 June and 11-15 June 1768... "Inoculation. Whereas it has been industriously propagated by ill natured prejudice, to serve some selfish end, or from a principle of a baser nature, that Messrs. Porter and Perfect, surgeons at Aylesford and Town Mallig in Kent have lost patients by inoculation, both in the country and other parts of England. In justice to themselves and their partners in particular, and the public in general to shew how false such reports is, they hereby offer a reward of two hundred guineas to any person who can prove that they, or any one of those gentlemen who have honoured them with their connections both in England and Ireland, ever lost a single patient by inoculation; that any one had had the smallpox a second time; or that their patients

in general have not passed through the disorder in as favourable a manner and with as much safety, as those who have been under the care of any inoculation whatsoever.

"Such persons who chuse it may be taken in and generally accommodated, during the short space of the inoculation, in their dwelling houses either at Aylesford or Malling.

"Any party collected together may be immediately waited on and inoculated at places of their own providing upon terms agreeable to distance and circumstance.

"The poor of the parishes are undertaken and attended upon easy terms."²⁴

The parish registers of Headcorn, Kent, and Marston Trussell, Northamptonshire show that the practice was attended by very real risks:-

Headcorn

Burials.

5 May 1784. Elizabeth Beek, infant, died of the smallpox by inoculation.

7 May 1784. Samuel Beek, infant, died of the smallpox by inoculation.²⁵

Marston Trussell

Burials

25 March 1790, died 25 March. Thomas son of Nicholas and Ann Bishop inoculated when the Parish were in general for small Pox.

26 March. Charles son of John Junior and Elizabeth Partridge likewise.²⁶

Not without justification the general populace believed that inoculation hospitals tended to spread smallpox in the district, which caused tradesmen to avoid the region so that provisions became scarce and expensive. In particular they resented the fact that outsiders came to their town and endangered the local people.²⁷ Twenty four inhabitants of Dunstable in 1766 agreed together to prosecute a local doctor if he inoculated because of " . . . the Danger of Infection

caused by Inoculating ... as it must not only put a stop to the Trade of the Town in general ... but must endanger the Lives of such of the Inhabitants who have not had the same Distemper ... and more especially as it must spread among the poor of the Town, a great and heavy Charge must be brought upon the parish."²⁸ On other occasions a mass inoculation programme was carried out, as for example in Winchester in 1774. About 900 were so treated including 400 poor persons, but by 30 April of the same year the magistrates imposed a ban, with the sanctions of imprisonment and fines. In later years bans were usually imposed before the start of the summer season.²⁹

In any case, whether the practice was merely spreading the scourge though possibly attenuating it at the same time, or was a genuinely useful preventative measure, there is no doubt that for the first time large numbers of people were under careful observation whilst undergoing treatment for the same illness, namely inoculation smallpox. One may well surmise that wherever the general practitioners of the day met, whether professionally or socially, they would compare notes, which in the end would all tend towards an advance in medical observation and practice.

John Haygarth of Chester (1740-1827) was the first to really understand the principles of isolation and enforced them with a great measure of success at the smallpox hospital; his schemes may well have succeeded all over Britain but inoculation was about to be overtaken by the immeasurably safer practice of vaccination.

Vaccination or deliberately induced cowpox (vaccinia) was without doubt known in the West Country in the early eighteenth century, in West Wales at a very much earlier date and probably in most dairying districts, such as Leicestershire and Cheshire.³⁰ The man who brought it to the attention of the 'establishment' was Edward Jenner (1749-1823).

He was born in Berkeley the last of the ten children of Stephen Jenner, the vicar. Fisk states that Edward's schooling was finished in 1761 at the age of twelve, which when his family background is considered, was unusually early, and that he was soon afterwards apprenticed to a Mr Ludlow, surgeon of Chipping Sodbury.³¹ She goes on to write, "The word surgeon must not be interpreted as strictly as it is today, and Mr Ludlow, although he did not have the standing of a physician, carried on most of the work required of the country doctor. His practice was extensive. Patients were the local gentry and their servants, well-to-do tradesmen and the more substantial farmers."³²

In 1770 the young Jenner went up to London to be a student of John Hunter, and whilst in the metropolis he went to the lectures of George Fordyce and Thomas Denman.³³

By the end of 1772 he had collected all his certificates and soon afterwards returned to Gloucestershire to practise. There he was the instigator of two medical societies. It was at these meetings that he and Caleb Parry advanced their views on angina pectoris and Jenner's belief that diseases of the heart could follow acute rheumatism. He was leading the typical life of the surgeon and apothecary or general practitioner of the day who practised in the country towns. It was not until he moved to the spa of Cheltenham in 1790 that he decided to turn physician and busied himself with pursuing a degree. He obtained an M.D. from St. Andrew's on 8 July 1792 on the recommendation of J.H. Hicks of Gloucester, M.D. and C.H. Parry of Bath, M.D.³⁴ It was already three years since he had vaccinated his young son with swinepox which set in train the whole momentous story of cowpox vaccination against smallpox.

This discovery, one of the greatest and most far reaching in medical history, was undoubtedly the finest of the eighteenth century. The only

other to bear comparison being the administration of the foxglove in dropsy. The discoverer of its use was another man whose initial medical training had been with a country apothecary. William Withering (1741-1799) was the son of Edmund Withering, apothecary who practised in Wellington, Shropshire. William after he finished his tuition with the clergyman Henry Wood of Ercall must have obtained his first insight into medicine from his father and then possibly from his mother's brother, Dr Brooke Hector of Lichfield.³⁵ In 1762 he went to Edinburgh where he was taught by such renowned men as William Cullen, Alexander Monro and John Hope. He graduated in 1766 after presenting a thesis entitled De angina gangraenosa which was dedicated to Brooke Hector and Henry Wood. Like Fothergill and Huxham who had already written on the malignant ulcerous sore throat, Withering did not clearly distinguish scarlet fever from diphtheria, yet he gave the best description of classical scalatina up to that time.³⁶

He wrote observations on two dissected cadavers and in the preface included the following note, "Since public cadavers were lacking and since some private ones had been obtained by that very capable learned and especially lovable youth, my friend Nooth who seeks with me the laureate of medicine. ..."³⁷ This is a reference to John Mervin Nooth who was appointed in 1775 to a senior post in the medical services of the British army in North America and did much original work on apparatus for the preparation of artificial mineral waters.³⁸ He was the son and grandson of country apothecaries. Many of Withering's friends fell into this category, men who obtained their first medical training with a surgeon and apothecary, often a relative, and proceeded for a few years to a university, usually Edinburgh at this period. He became a life long friend of Thomas Arnold, who had been an

apprentice of Richard Pulteney, apothecary of Leicester, and Thomas Fowler of whom Arnold wrote so glowingly to his late master on 26 December 1762, "I need not tell you Edinburgh is the place to my wish and that a college life is my element ... communicating our knowledge with a few select companions. Of these I have a few, and as you advised me, but a few. Mr Bentley and another gentleman whose name is Fowler are the companions I prize most: they have made the greatest progress in medical and other knowledge and their conversation is the most interesting and improving. The latter seems to have applied to the study of physic merely from the strength of inclination. He did not begin till late and though he was never an apprentice to an apothecary now that is his profession, yet he made such great progress in medical knowledge that his master whose business he managed, took him into partnership. He had been in business for two years when, not satisfied with the knowledge he had already acquired in the medical art, he resolved to enlarge it by studying at Edinburgh. He is a staunch Boerhaavian ... These gentlemen with myself and two others of the students have formed a Society. We meet every Saturday at 3 o'clock in the afternoon and each of us produce an essay etc. on a medical subject and in what language we please. I have twice ventured to write in Latin: for I am continuously haunted with my thesis and public examination in that language and therefore take every opportunity of exercising myself in it."³⁹

This pattern of apothecarial training extended by some years of university life might be described as having been set in being by John Fothergill, a pattern which was to prove so successful in placing British medicine in a position of eminence. John Fothergill (1712-1780) was bound when he was sixteen to Benjamin Bartlett of Bradford, Yorkshire

and in 1734 departed for Edinburgh where he took his degree two years later. Bartlett (1678-1759) was a well known bookseller as well as an apothecary; like the Fothergills his family were Quakers and his home was for many years a licensed Friends' meeting house. He had a number of apprentices besides Fothergill and so justified the remark of Gilbert Thompson, the biographer of the doctor, that "His house might be called the seminary of ingenious physicians."⁴⁰

His son, also Benjamin, became an apothecary too and for a while ran his father's business until he was persuaded by Fothergill to move to London in 1766.⁴¹ He set up in practice in Red Lion Square. He became ever more interested in antiquarian studies and when his health declined he resigned to James Bogle-French.⁴²

After Edinburgh John Fothergill spent some two years at St. Thomas's, London under Dr. Mead's son-in-law, then after a European tour in 1740 set up in full time practice as a physician in which he was enormously successful and justifiably popular. No physician shows greater evidence of his early pharmaceutical training. Until the mid eighteenth century the formulation of emulsions had been poor, egg yolk being most commonly used which frequently caused the preparation to become rancid and was expensive to boot. Dr. Ritty of Dublin, of mineral waters fame, drew Fothergill's attention to the possibilities of mucilage of gum arabic. He and James Bogle-French carried out a number of experiments in order to ascertain which was the most effective emulgent. Fothergill read the results before the Medical Society of Physicians in 1757, in which it was shown that gum arabic or acacia was the most effective, followed by quince seeds, gum tragacanth and syrupus altheae.⁴³ 1760 saw the introduction of hemlock or cicuta by Storck of Vienna for the treatment of cancer. From their letters it can be seen that William Watson,

Pulteney and Hudson all tried it out, as did Fothergill. He found that it mitigated pain but was only really useful if given in doses to the point of toxicity. He was aware that extracts could vary in efficacy and realised it was important that the plant should not be gathered before it had reached its peak of growth and that very little heat should be used in the preparation of the extract.⁴⁴ He had a keen interest in pharmacognosy in his early years in London and is credited with the introduction of the astringent gum kino. He eschewed the complex preparations of the day and preferred to replace them with simpler but well prepared compounds made from first class drugs, which he supported by a good wholesome diet, moderate exercise and fresh air. He was particularly successful in his treatment of pulmonary tuberculosis in which he anticipated many features of today.

John Coakley Lettson (1744-1815), Fothergill's friend, disciple and biographer, had a not dissimilar medical training. His schooling was had at Gilbert Thompson's Quaker school at Penketh, Lancashire, and then when Thompson went to Edinburgh to study medicine, he was sent off to the little market town of Settle to be bound to Abraham Sutcliffe, apothecary and surgeon, for five years.⁴⁵ After his apprenticeship was finished he went to London armed with a letter of introduction to John Fothergill, who urged him to continue his training. He acted as surgeon's dresser to Benjamin Cowell at St. Thomas's for a year, during which time he lived with Peter Collinson and Gilbert Thompson at No. 40, Gracechurch Street, a few doors away from No. 51 where William Curtis was to work with Thomas Talwin, apothecary, some months later.⁴⁶ Family matters being pressing he returned to the West Indies to settle up his monetary affairs. He practised for several months there and gathered enough money together to go to Edinburgh in 1768. He spent

only a short time there and then went on to Europe. He visited the medical world of Paris and in 1769 graduated M.D. of Leyden after presenting a thesis on the medicinal properties of tea.

He set up in practice in the City of London as a physician, like Fothergill becoming a licentiate of the College. His interests were wide; he wrote on the subject of inoculation of which he was a champion but was an early convert to vaccination; had a keen interest in botany all his life, as had Fothergill, and made many efforts to popularise the use of the mangold-wurzel; in medicine he published a useful paper on the treatment of fevers, the effects of alcohol and described the symptoms of peripheral neuritis; he is mainly remembered for two new projects for which he was responsible, the birth of the dispensary movement and the founding of the Medical Society of London.⁴⁷

In 1773 Lettson had been elected to the Royal Society which probably gave him the impetus to found in the same year a broadly based medical society, which would publish papers, establish a library and encourage medical innovation. All his life Lettson had a fond regard and respect for his old apprentice master, a regard which he seems to have extended to other apothecaries as he was determined that the new society should include all branches of the medical profession. The people who he gathered round him included apothecaries such as Charles Combe, the numismatist, W. Atkinson and Timothy Lane who wrote on the effect of carbon dioxide on iron and on electrometers, surgeons such as William French, Joseph Shaw and George Vaux. The first meeting on 19 May consisted of ten people but there were nearly sixty by 10 August and included the august William Blizard, William Saunders and James Earle as well as Maxwell Garthshore, the friend of Richard Pulteney. Soon

afterwards the numbers were limited to 30 physicians, 30 apothecaries and 30 surgeons, who had to be qualified and none had to be the proprietor of a nostrum.⁴⁸

The surgeon and apothecary, as has already been noted, was the general practitioner of the day, but it is equally true to say that the future physician's approach to medicine was as likely to be via the apprenticeship of an apothecary and surgeon, as it was to be through a purely university education, whether it were by the Oxbridge formula or the newer one of the Scottish universities. Not only was it a common and frequently preferred approach but it produced first class medical men, men of the calibre of Jenner, Withering and Fothergill. Nobody understood the importance of this practical training, with if possible the inestimable advantage which could be obtained from experience in a hospital, more than they did themselves.

Henry Lampe an apothecary of Ulverston who died in 1711, wrote in his will, "It is my will and mind, that in case my son, Ephraim Lampe, when he cometh to years of discretion, incline to betake himself to ye study and practice of physick, that he bee putt betimes to a good apothecary, in a country town, ... where they have a deal of business for making up of doctors' bills, and for visiting of patients, for three or four years, after which time I would have him to frequent some good hospital, where hee may see and learne surgery ..."⁴⁹ In 1762 William Watson was made physician to the Foundling hospital and Pulteney sent him his congratulations. Watson's letter of the 11 December agreed that the extra work would be a problem as he was already very busy but he was glad to have the post as it would prove useful to the medical education of his son" ... as an hospital of all places is the most proper for the instruction and observation of a young physician."⁵⁰

Even if the eminent men are excluded from consideration in the apothecary/surgeons' contribution to medicine, many men of modest attainment should be noted. As has already been indicated the surgeons were in the forefront of the fight against smallpox, they were not content merely to carry out just treatment but went into print, wrote of their experiences and expounded their beliefs. Some were well known in the world of surgery as was William Bromfield, surgeon at St. George's, others were quite obscure such as the surgeon and apothecary Benjamin Chandler (1737-1786) of Canterbury.⁵¹ Some were even less known, for example the apothecaries John Chandler of the City and John Covey of Basingstoke.⁵² Their papers were of merit and were not a whit less important than that of Dr. (later Sir) George Baker, a product of Cambridge university and student of William Heberden.⁵³

It is apparent from John Mudge's, A dissertation on the inoculated smallpox ..., (1777) that he had been conducting research into the effects of inoculation in conjunction with two other apothecary/surgeons, Messrs. Longworthy and Arscott of Plympton. Mudge (1721-1793) the son of Zachariah, master of Bideford grammar school and prebendary of Exeter, was a popular general practitioner who practised in Plymouth. Like William Bromfield he wrote on other subjects, both medical and non-medical, for example on the lateral operation for the stone, and on the reflecting telescope. On 29 May 1777 he was elected fellow of the Royal Society and in the same year was awarded the Copley medal for his work on the telescope.⁵⁴ He introduced an inhaler for the relief of catarrh which proved very acceptable. He received an M.D. of King's College, Aberdeen, in 1784, The Dictionary of national biography, says that from that date he practised as a physician but in 1764 he had already termed himself 'practitioner in physick', and even as a 'physician' in August 1767

when he took William Cookeworthy as his apprentice.⁵⁵

The South-West produced a number of men of Mudge's calibre. Perhaps the best known is Edward Spr(e)y primarily because of a bizarre incident in which he was involved. Spry matriculated at Oxford with the intention of reading (1767) theology but abandoned it in favour of physic. He returned home to Plymouth and was apprenticed to George Woolcomb for five years; after apprenticeship he gained further experience in London and visited a number of the European schools of medicine.⁵⁶ He then started in practice as an apothecary in his home town. In the small hours of 2 December 1755 the 45 year old Wooden Eddystone lighthouse caught fire and burnt down before the morning was out. The three keepers were rescued and arrived in Plymouth in the early afternoon. One of them is said to have been the incredible age of 94, he was suffering from burns, shock and exposure which was only to be expected, but he excited the imagination of the locals by claiming that he had swallowed some molten lead. After six days he appeared to be making a good recovery and was able to swallow food and drink readily enough, then suddenly on the twelfth day his condition deteriorated and he died within a matter of hours. Most thought he was mentally deranged from his experiences as one of the other keepers appears to have been, but Edward Spry took him seriously enough to carry out a post mortem.

Spry announced that he had found a piece of lead in the stomach which weighed over seven ounces. Unfortunately he had no witnesses as none of those who he invited to be present had had the nerve to watch.⁵⁷ He was greeted with scepticism so he carried out some particularly repulsive experiments with chickens and dogs this time before witnesses, and showed that the animals could survive for a number of days, and that

they could eat and drink normally during this time. His paper was read before the Royal Society and published in the Transactions.⁵⁸

He too gained an M.D. of Aberdeen. (January 1759). Munk writes that he started to practise as a physician in Totness in 1762 but he termed himself a 'practitioner in physic' at least two years earlier.⁵⁹

He was an extra-licentiate of the College by 1767 and in the following year M.D. of Leyden.

All these men, Bromfield, Mudge, both the Chandlers, Arnscott and Spry had their apprentices, to whom, one hopes, they ably passed on their experiences and enthusiasm.⁶⁰ Mudge like Bartlet in the north of England had almost a small training school, as did his fellow Devonian Nicholas Tripe, surgeon of Ashburton, who between the years 1743 and 1783 had at least nine apprentices. In 1754 he carried out a most unusual dissection which in conjunction with the well known John Huxham he reported to the Royal Society. A body had been found in a vault of the church at Staverton, which, although it had been buried for eighty years, was in a remarkable state of preservation. Tripe gives a detailed description of a careful dissection, and concludes that the state of the body was due to the pitch and tar soaked cloths in which it was wrapped and not to any miraculous agency - a conclusion which shows a suitably dispassionate scientific approach.⁶¹

The contribution of the apothecary/surgeon to the ordinary run-of-the-mill practice of medicine has manifestly been ignored; still more so has that to medical innovation. In the latter case it is not going too far to say that his contribution has been either deliberately played down or else the ignorance of the facts has led to a similar result. Lettson is proclaimed to have been a product of the Edinburgh medical school, yet his stay there was of only a few months duration, whilst

his time in Leyden from where his M.D. enamated was even shorter.⁶²

As Rook has shown the time students spent in Leyden was much less than was generally believed.⁶³ Mudge obtained a degree of Aberdeen, though like many another, was never in that city, the whole of his medical training can be laid at the door of apprenticeship and the provincial apothecary.

If an apothecary did well in any sphere of life as for example John Houghton and his Collections for the improvement of agriculture and and trade then the writer of his biography in the Dictionary of national biography must erroneously confer on him an education at Cambridge, confusing him with another of that name.⁶⁴ Again the Dictionary has accredited Benjamin Chandler of Canterbury with an M.D. although none is known;⁶⁵ F.H. Fox has written that two of Thomas Dimsdale's cousins had M.D.'s although only one, that of Robert, has been traced.⁶⁶ Again Thomas Heberden, brother of William the physician, a keen metereorologist and a fellow of the Royal Society is said by Rolleston to have been an M.D. He was in fact an apprentice of Lancelot Copplestone, citizen and barber surgeon in 1716 and was taking an apprentice himself in 1725.⁶⁷ The universities produced some very fine men of medicine, men of the calibre of John Huxham (Leyden), William Heberden the elder (Cambridge), Richard Mead (Leyden) and Francis Glisson, (Cambridge) but it is true to say that the main stream of advance and every day practice was via the apothecary/surgeon apprenticeship augmented by higher study.

Notes and references.

1. A.W.Franklin, "Clinical Medicine", in A.G. Debus (editor),
Medicine in seventeenth century England,
London, University of California Press, 1974,
pp.113-145, see p.135.
2. K.Dewhurst, Dr. Thomas Sydenham (1624-1689), London, The Wellcome
Historical Medical Library, 1966, p.16.
3. Ibid., p.17, quoting The diary of the Reverend John Ward, M.A.
(1648-1679), C.Severn (editor), 1839, p.242.
4. Ibid., p.24.
5. Ibid., p.40.
6. K.Dewhurst, The quicksilver doctor, Bristol, Wright, 1957, pp.117,
27, 130.
7. A.R.Hall, The scientific revolution, 1500-1800, London, Longmans,
Green and Co., 1962, 2nd. edition, p.131.
8. L.M.Zimmerman, "Surgery", in A.G.Debus (editor), Medicine in
seventeenth century England, op.cit., pp.49-69,
see p.52.
9. Ibid., p.65.; S.X. Radbill, "Pediatrics", in A.G.Debus (editor)
Medicine in seventeenth century England,
op.cit., pp.237-283, see pp.262, 268.
10. G. Miller, The adoption of inoculation for smallpox in England and
France, Philadelphia, University of
Pennsylvania Press, 1957, p.166.
11. W.Boorman, 'Smallpox in eighteenth century Winchester', (letter),
Local population studies, 1968, 1:35-38, e.g.
St. Peter Chesil, Winchester.

12. Miller, op.cit., pp.161-2.
13. W.Boorman, op.cit., p. 36.
14. The history of inoculation and vaccination, XVIIIth International Congress of Medicine, London, 1913, London, Burroughs Wellcome & Co., n.d. pp.47-48.
15. R.H.Fox, Dr. John Fothergill and his friends, chapters in eighteenth century life, London, Macmillan, 1919, pp.81-2.
16. The archidiaconal visitation of 1715 shows William Dymself to have been a surgeon in Bishops Stortford.
See appendix B., p. 465, 468.
17. Fox. op.cit., p.82.
18. Alumni Cantabrigienses, 2:43. Robert Dimsdall admitted pensioner at St. Catharine's 5 March 1679. Matriculation 1679. M.B. 1684. M.D. 1696.
Died 7 January 1725 aged 65. M.I. All Saints, Hertford. John has not been found.
19. It is doubtful if Dimsdale went in person to Aberdeen, any more than James Clegg had done, or Dr. Brodnum when he received an M.D. from Marischal College.
See K. Dewhurst, The quicksilver doctor, op.cit., p.37.
20. T.Dimsdale, The present method of inoculating for the small-pox, 1767.
21. Miller, op.cit., p.166.
22. Ibid., pp.165,168. When he was at Rye he took as apprentice Charles Hill for seven years from 1 January 1749.
Inland Revenue apprenticeship records, I.R./1/18, f.162. The Frewen family originated

in Worcestershire but John Frewen (1558-1628) was made rector of Northiam, Sussex in 1583 and thereafter they were centred on that town. John had a strong tendency towards non-conformity but his eldest son, Accepted, became Archbishop of York.

23. Dictionary of national biography, XX:275.

24. D.Harrington, 'The smallpox controversy continued' (letter),

Local population studies, 1975, 14:58.

A William Perfect of West Malling, surgeon and apothecary, presumably one of the partners, took a P. Samuel Caistor as an apprentice for seven years in 1766. See Inland Revenue apprenticeship records, I.R./1/25, f.10. The advertisement gives the impression that the surgeons had lived elsewhere; possibly Surgeon Perfect was related to Robert Perfect, surgeon and apothecary of Wincanton. He had been apprenticed to William Plucknell apothecary of that town for seven years from 24 December 1732 and in his turn trained several apprentices. See I.R./1/13, f.137, I.R./1/53, f.*135, April 1760, I.R./1/62, f.12.

25. D. Harrington, 'Smallpox' (letter), Local population studies, 1977, 18:58.

26. G.F.Richard, 'Smallpox inoculation deaths' (letter), Local population studies, 1977, 19:53.

27. In March 1753 the physicians and surgeons of Newbury, Berkshire promised that they would not inoculate any non-residents of that town for two years.
See Miller, op.cit., p.167.
28. In sickness and in health, Bedfordshire record office pamphlet, p.2.
29. Boorman, op.cit. p.37.
30. History of inoculation and vaccination, op.cit., p.55.
31. Most authorities state that he was apprenticed to a Mr. Ludlow. See Live of British Physicians, London, J.Murray, 1830, pp. 252-74.
J. Baron, The life of Edward Jenner, M.D., London, H.Colburn, 1838, p.3.
History of inoculation and vaccination, op.cit., p.61. F.D. Drewitt, The life of Edward Jenner, M.D., London, Longmans, 1933, p.2.
- The dates varying from 1761 to 1763, but this is not confirmed by the Inland Revenue apprenticeship records. They indicate that Edward Jenner was apprenticed on 1 August 1764 for seven years to George Hardwicke, apothecary of Chippin' Sodbury. The premium was £100.
I.R./1/55, f.122. Two years later George Hardwicke took another or second apprentice John Pitman, I.R./1/25, f.9.
- The Hardwicke and Ludlow families were connected. The same records show that Ebenezer Ludlow, surgeon and apothecary of Sodbury, not only trained his son Daniel but also Robert Scott and William Wickham,

I.R./1/28, f.169, I.R./1/34, f.84, whilst Abraham Ludlow surgeon of Bristol, took on the training of another George Hardwicke for five years on 25 April 1768.

See I.R./1/25, f.169.

32. D.M.Fisk, Dr. Jenner of Berkeley, London, Heinemann, 1959, p.17.
33. Thomas Denman, surgeon and accoucheur, who placed the discipline of obstetrics on a sound footing was the son of an apothecary in Bakewell, Derbyshire.
34. Fisk, op.cit., p.106.
35. Edmond, son of William Withers (sic) of ye Hill, Salop was apprenticed to George Hector, surgeon, of Lillishall Lodge, Salop for five years from 29 September 1730. See Inland Revenue apprenticeship records, I.R./1/49, f.248. In his turn Edmund took as apprentices Richard Inge in 1742 (I.R./1/50, f.170), Fenton Griffeths in 1744 (I.R./1/50, f.228), William Buttor in 1760 (I.R./1/54, f.20), and Benjamin Hector (I.R./1/56, f.*65, January 1768.) Edmund Withering married a Sarah Hector, sister of Dr. Brooke Hector of Lichfield and presumably the daughter of his apprentice master.
36. J.F.Fulton, "The place of William Withering", in The Davis lecture committee (editor), Essays in the history of medicine, Chicago, 1965, pp.115, 113.

- 37, Ibid., p.115.
38. D.Zuck, 'The provincial apothecary' (letter), Pharm. Hist., 1978,
8:2:unpag.
39. The Linnean Society Library. The Pulteney correspondence.
Letter from Thomas Arnold to Richard Pulteney,
26 December 1762.
Thomas arnold (1742-1816) practised in
Leicester and there owned and supervised a
mental hospital. He made a particular study
of mental illness, possibly because he married
the sister of James Graham, the 'quack' doctor
who died insane before he was fifty. See
R.H.Jeffers, 'Richard Pulteney, M.D., F.R.S.
(1730-1801) and his correspondents',
Proc. Linn. Soc. Ldn., 1960, 171:24.
Fowler retained his pharmaceutical interests
and introduced an eponymous solution of
arsenious oxide which contained spirit of
lavender to inhibit the growth of moulds, a
hazard in arsenical preparations as they cause
a deposition of the metal. He succeeded
Withering at the Stafford infirmary.
40. Inland Revenue apprenticeship records. William Hillary, I.R./1/44,
f.82; I.R./1/46, f.^x130, February 1721;
Henry Smith, I.R./1/50, f.163.
41. A Raistrick, Quakers in science and industry, Newton Abbot,
David & Charles, 1950, p.282.
42. Fox, op.cit., p.11n.

43. Ibid., p.41. Benjamin Bartlett (II) married Martha Heathcote (c.1723-1785) in 1744, the niece of her namesake (c.1692-1757) who married Sylvanus Bevan in 1719. Information supplied by Dr. Helen Ford, late of the Friends' Library and now of the Public Record Office.
44. Ibid., p.42.
45. Inland Revenue apprenticeship records, I.R./1/22, f.²90, May 1761.
The premium was £60. Abraham Sutcliffe started life as a weaver but when he was sixteen went to a relative, a Mr Ecroyd who was a surgeon in Kendal. He had a short time at Edinburgh and then began to practise in Settle where he trained many apprentices. See I.R./1/18, f.119, John Foster; I.R./1/21, f.²210, January 1759, Robert Tunstal.; I.R./1/55, f.²20, February 1764, John Binns.; I.R./1/57, f.²100, June 1779, Thomas Fothergill, I.R./1/31, f.²190, February 1782, Edward Goodman. His son William followed him in the practice and continued to take apprentices. When he retired Lettsom invited Abraham Sutcliffe to London and his testimony procured for him an M.D. from Aberdeen. See, Raistrick, op.cit., pp.279-80.
46. Lettsom gave Curtis financial assistance with his Flora Londinensis and the second volume is dedicated to him.

47. The General or Aldersgate Dispensary was founded in 1770, the first physician was Dr. Nathaniel Hulme, and a little later, the first surgeon George Vaux junior.
48. Fox, op.cit., p.153.
49. Raistrick, op.cit., p.278.
50. Pulteney correspondence. Letter from Richard Pulteney to William Watson, 11 December 1762.
51. W.Bromfield, Thoughts arising from experience concerning ... the small-pox, 1767.
He was the son of Thomas Bromfield, M.D.(Oxon) of London and brother to James, apothecary in Soho. See T.D.Whittet and J.G.L.Burnby, Plague, pills and surgery, the story of the Bromfields, Enfield, Edmonton Hundred Historical Society, 1975.
B.Chandler, An essay towards an investigation ... of inoculation, 1767. It has been claimed to be the first detailed account of the Suttonian practice. He wrote also a criticism of Cullen's theories and views on apoplexies and palsies (1785). See The Dictionary of national biography, X:38.
52. J.Chandler, A discourse concerning the small-pox, occasioned by Dr Holland's essay, 1761. John Chandler (1700-80) was a partner of Smith & Newson in Cheapside. He also wrote on the common cold. See The Dictionary of national biography, X:39.

J.Covey, 'Further observations & facts relative to ... inoculation ...', The Ldn. Med.Jnl., 1787.

53. G. Baker, An inquiry into the merits of a method of inoculating the small pox, 1766.

George Baker, (1722-1809) the son of the vicar of Modbury, Devonshire was educated at Eton and King's where he graduated in 1745 and gained his M.D. in 1756. He was nine times president of the College of Physicians and was famous for the 'detective' work which proved that Devonshire colic was due to lead poisoning.

54. The Dictionary of national biography, XXXIX:254-5.

Mudge's brother Zachariah (1714-1753) was a surgeon on an East Indiaman and died at Canton, whilst Thomas (1717-1794) was a horologist of note.

55. The Inland Revenue apprenticeship records. I.R./1/55, f.^x22, February 1764; I.R./1/56, f.^x42, August 1767. The Cookworthy and Mudge families were close friends; this William Cookworthy was almost certainly the son of Benjamin (1718-86), the brother of William (I) (1705-80) the inventor of English porcelain. This nephew (born 1750) ran his uncle's retail and wholesale chemist and druggists business after 1780 until Francis Fox (1765-1812) William (I)'s grandson could take over. See A.D.Selleck, William Cookworthy, 1705-80, and his circle, Plymouth, Baron Jay, 1978, pp.44,47, 208-9.

56. W.Munk, The roll of the Royal College of Physicians of London, London, Royal College of Physicians, 1878, 2:281-3.
I.R./1/50, f.184. Edward son of Edward Spry was apprenticed to George Woolcombe for five years from 1 July 1742; the premium was £105. There is some doubt where John Mudge was trained but some sources suggest that it was with a member of the Woolcombe family of Plymouth. See Selleck, op.cit., p.157. Certainly John, George and Thomas Woolcombe all had many apprentices between 1730 and 1783. See Inland Revenue apprenticeship records, volumes 18, 21, 49, 50, 52, 55, 56, 60 and 62.
57. F. Majadabay, The red rocks of Eddystone, London, Arrow Books, 1962, pp.110; 116-18. The actual piece of lead, which is not unlike the pit of the stomach in shape, is said to be at the Royal Scottish Museum, Edinburgh.
58. Philosophical Transactions of the Royal Society, XLIX:477.
59. I.R./1/53, f.78, 2 February 1756 he was termed 'apothecary' but I.R./1/54, f.15, 9 October 1760 he was termed 'practitioner in physic'. It is interesting to note that just at this time John Mudge was also taking an apprentice and he was still described as a 'chirurgion etc'.
60. Besides the large number of pupils Bromfield introduced to the board of St. George's Hospital, he had a good number of his own apprentices, men who became as well

known as David Bayford or John Wiggan May -
the latter's father had paid the large sum
of £735 for the privilege.

61. Philosophical Transactions of the Royal Society, XLVII:253.
62. N.G.Brett-James, The life of Peter Collinson, London, published for
the author by Edgar G.Dunstan & Co., n.d., p.16.
63. A.Rook, 'Cambridge medical students at Leyden', Med. Hist., 1973,
pp.256-65, See p.264.
64. Dictionary of national biography, XXVII:422-3.

This was pointed out to me by D.O.Rourke,
librarian at Reading University library.
65. Dictionary of national biography, X:38.
66. Fox, op.cit., p.81.; Alumni Cantabrigienses, Pt.I, II:43. M.D.1696.
67. H.Rolleston, 'The two Heberdens', Ann. Med. Hist., N.S. 1933,
5:409-27, see p.411.;

Inland Revenue apprenticeship records,
I.R./1/5, f.^x50, 5 December 1716, ^x55,
4 January 1717. Thomas son of Richard Heberden
of Southwarke was apprenticed for seven years
to Lancelot Copplestone, citizen and barber
surgeon. In the first instance the premium
was agreed at £40 but then an extra £10 was
demanded and obtained whereupon Copplestone
had to pay more tax., I.R./1/10, f.150.

In April 1725 Thomas Heberden, citizen and
barber surgeon agreed to train William, son
of John Alban of Deptford, vintner.

CHAPTER IV

THE EDUCATION AND CULTURAL INTERESTS OF THE APOTHECARY

The apothecary received his professional training of first instance by apprenticeship, a system which at its best, as Clarke has said " ... was fully justified."¹ Claims for the apprenticeship have been listed under three headings:-

- i) A fund of skill acquired by clinical experience was transmitted directly to the apprentice.
- ii) By continuously attending the same patients, the apothecaries developed the qualities of a family doctor.
- iii) The practical training was free from the detrimental interference of both theorists and theories, a view that was not solely confined to the study of medicine. Pilkington believes that Boyle was able to demolish 'the four-element system of the scholastics' and 'the three-principle notion of the alchemists' because, amongst other things, " ... he had not been to the university and so he had escaped prolonged indoctrination with scholastic teaching ..."²

The Act of 1563 known as the Statute of Artificers made apprenticeship a legal necessity for the practice of all trades and crafts. These were specified by name, which later contributed to the Act's undoing, for in the seventeenth century the courts ruled that any trade or craft not named in the Act was not subject to it. The Industrial Revolution created new trades in their hundreds, all of them unheard of in 1563.³ The Act also said that the apprenticeship should last seven years. By the eighteenth century, although seven years was still the commonest period of time, others are frequently found. Parish apprentices were bound for much longer periods, some as long as sixteen years, and the usual period for the apprentices of the citizens and apothecaries of London was eight years.

But the tendency was for the apprenticeship to become shorter, five years was frequent and even three.⁴

Cameron writes that the apothecaries of the London company chose their apprentices with care and that in the time of Anne their education, at least in regard to the craft of pharmacy, was efficient.⁵ The boy was taken to the Hall at an age between fourteen and sixteen and there was orally examined before the Private Court as to his general knowledge. The examiners laid particular stress on his ability to read and write Latin, certainly at least one boy was rejected for insufficiency in that subject.⁶ After his time was finished the young man was again examined by the court; most would have seemed to pass but by no means all. On 10 December 1636 Arthur Denham, apprentice of Henry Field was not found " ... so sufficient as is fitting for an Apothecary" but was allowed his Freedom on the grounds that his master had afforded him insufficient opportunities for learning. Field explained that he compounded few medicines himself but sold those made by other "good and approved Apothecaries." Denham was told that he could only practise provided he kept an able journeyman who was to instruct him in the art.⁷ Denham was called to the livery in March 1660, but possibly he continued to run the type of practice that his master had, as in August of that year, he asked to have liberty to take two apprentices as a grocer and apothecary.⁸

Another who was granted his Freedom only on similar conditions to Denham was Edward Underwood. He was told he was " ... to take no apprentice for two years, during which tyme he shall keep an able journeyman, for that he is, both this Company and the College, found to be very ignorant in the profession of an apothecary."⁹

During his apprenticeship the boy was taught how to dispense the complicated prescriptions of the physicians, how to compound the

preparations of the pharmacopoeia and recognise the drugs which were in use. From the reports of the censors who 'searched' the apothecaries' shops it is apparent that the College expected the apothecary to stock the full run of preparations in current use.¹⁰ The apprentice attended the herborising expeditions organised by the Society and had lectures at the physic garden at Chelsea. The recognition of simples was regarded as particularly important from the earliest days of the Company. As early as May 1620 it is recorded that "Thursday after Whitsonweeke was appointed for the Simplinge Daie and the Companie to meete at Paules at 5 in the morneinge at furthest." At first there was only one herborising day a year but they gradually increased in number until there were six, at approximately monthly intervals. On March 26, 1680 it was "Ordered that there be four private herborising days this year besides the generall herbarising day and preparatory daye."¹¹

The origins of the Physic Garden can be traced back to 1673 when a three and a half acre piece of ground was rented for building a barge house - an important status symbol - and for a garden which would not only redound to the credit of the Society but was essential for the education of the apprentices.¹² The garden for much of its existence proved a financial problem to the Society and at no time was it worse than when a garden committee was set up after Samuel Doody's death in 1706. Eventually in January 1708 it was decided to set up a joint stock of 90 subscribers, the moving spirits being James Petiver and Isaac Rand. The venture did not prove a success probably because the aims of the garden committee and the subscribers were at complete variance, the former believing that the garden should be organised mainly for educational purposes, and the latter expecting a profit making concern.¹³ As is well known the Society's problems were solved by the clear-headedness and generosity of Hans Sloane.

In spite of its predicament James Petiver was appointed demonstrator in 1709 and towards the end of his life (1718) was helped by Isaac Rand. In 1724 Rand was given the new position of 'praefectus horti' or director of the garden. Among other duties he had to give at least two demonstrations in the garden in each of the six summer months and to transmit to the Royal Society the fifty specimens a year demanded by the terms of Sloane's gift.¹⁴ After he had been in this position for six years Rand published at the Apothecaries' expense Index plantarum officinalium ... in horto Chelseiano, a work which unlike Philip Miller's Catalogus was aimed at instructing the apprentice.¹⁵ Rand's appointment was probably a sop to a scheme proposed by Zachariah Allen that a repository for drugs and materia medica should be established in the Hall and that a lecturer should be appointed at £40 a year to give two courses of lectures annually, each six weeks long. This idea unfortunately did not come into being even though it was fleetingly revived in 1748 or 9 when John Wilmer was made demonstrator.¹⁶

Apothecaries were not the only people to recognise the value of a physic garden. The College of Physicians decided to establish one in 1586 and selected the barber-surgeon John Gerard as its curator. The Company of Barber surgeons and Tallow Chandlers of Newcastle upon Tyne had one possibly as early as 1620, for amongst their disbursements is the entry:- "It. paid at the Gardiners for the Companie 1s.4d" And in 1632:-

"Ittem paid for dressing the garden and for seeds 17s.4d

Ittem paid for weeding the garden 1s.4d."

The accounts do not relate which type of garden was involved but

Celia Fiennes at the end of the century wrote of " ... a pretty garden

walled in, full of flowers and greens, In potts and in the Borders ... "

and after the Hall's rebuilding in 1730 Bourne described it as having, besides a square, two other gardens for herbs, which were attended by a gardener.¹⁷

Two pamphlets were published in 1704, Tentamen medicinale, (which had for part of its subtitle, ... wherein the latter {i.e. apothecaries} are proved capable of a Skilful Composition of Medicines, and a Rational Practice of Physick) and Reasons why the Apothecary may be suppos'd to Understand the Administration of Medicines, which pointed out that lectures and demonstrations were to be seen at the hall of the Barber-Surgeons, the latter pamphlet observing that the anatomical dissections were open to apothecaries as well as physicians.¹⁸ As has already been mentioned since the union of the London barbers and surgeons in 1540 a board of examiners had been set up and the organised teaching of anatomy was introduced, the company being allocated four executed felons a year. (p. 33) This form of instruction was not confined to London. In Salisbury probably as early as 1613 and certainly by 1675 the Company of Barber-Surgeons and Silk weavers were to make anatomies, " ... for the better increase of the skill and knowledge among Chirurgeons and barbers." The wardens upon request to the mayor, recorder and justices of the peace were to have the body of a condemned person after execution.¹⁹ In Newcastle the teaching of anatomy was in progress by 1690 or so, as the following minute shows:-

"May 23rd 1692. Disburst about ye man that was given the Company
for dissection. £4.10s.9d."

In 1711 it was decided to send to London for a skeleton which was not to exceed six guineas.²⁰

As Cameron has noted the charter of the Apothecaries' Society did not require them to examine a candidate for the Freedom in any subject other

than pharmacy. The student seems to have been well trained in pharmaceutics and materia medica, he could probably obtain a smattering of chemistry from the Society's chemical laboratory, but for medical practice he was dependent on his own efforts, and the results of these were not subjected to assessment.²¹ Deficiencies could be, and should have been, made good by extensive reading. The anonymous author of the Tentamen medicinale said that Gibson's Epitome was popular but that James Keill's work on anatomy was usually recommended, and the books of Willis, Sydenham, Morton, Archibald Pitcairne and Boyle were all available. Nearer to their own field were Ray's Historia plantarum and their fellow apothecary, Samuel Dale's, Pharmacologia.

Intensive reading was an accepted method of obtaining expertise in medicine as witness Sir Thomas Browne's unrealistically long list of books for reading which he sent to the young Henry Power in 1646.²² Although the universities appear to have never urged the young medical student to practical considerations, Browne was not so short sighted. He wrote, "The knowledge of Plants, Animals and Minerals, (whence are fetched the Materia Medicamentorum) may be your subsidiary study and, so far as concerns physic, is attainable in gardens, fields, Apothecaries' and Druggists' shops ... See what Apothecaries do ... See chymical operations in hospitals, private houses ... Be not a stranger to the useful part of Chymistry. See what Chymistators do in their officines." Power took his advice to heart and carried out chemical experiments, herbalised and dissected dead and living dogs.

Twenty years later and at 'the other place' John Ward was doing much the same sort of things. He spent hours in the shop of Stephen Toone, an Oxford apothecary, studying pharmacy, watched Francis Smith the surgeon at his operations and dissections, acted as bedside assistant to

Dr. William Conyers, visited the Oxford Physic Garden, went to Stahl's lectures in chemistry, and when he was in London tried to attend an anatomy at the Barber-Surgeons' Hall and collected receipts from 'chymists', physicians and apothecaries.²³

At a slightly later date, and with increasing frequency as time went on, it is known that some surgeons held private classes in anatomy and pathology. William Cheselden, pupil of the anatomist and teacher William Cowper, in 1711 two years after Cowper's death also began a course of 35 lectures, which he repeated four times a year. Three years later he was called to account for conducting dissections in his own home without the permission of the Barber-Surgeons' Company.²⁴ Some forty years further on young Robert Waring wrote to his friend in Worcester from London. He was obviously newly apprenticed with Mr. Hewitt surgeon, in Leicester Fields and was happy with his situation, particularly as his master " ... reads Lectures in anatomy (sic) which is greatly to my satisfaction and advantage. I attend St. George's Hospital and a very large workhouse, yt I have no Idle hours ..."²⁵

As has been already discussed, classes were run in chemistry (p.219), as they were too in pharmacy. John Quincy, apothecary, translator of the aphorisms of Sanctorius, (for which he was given an M.D. by Edinburgh university) and author of the immensely popular English Dispensatory, used to deliver lectures in his own house. He died in 1722 and in the following year they were published by his friend Dr. Peter Shaw as Praelectiones pharmaceuticae.²⁶

Nevertheless it was long before academic studies for apothecaries were a legal requirement as they had already become in France and Germany. In 1536 a Parisian ordinance required pharmacy apprentices to attend two lectures a week relating to pharmacy, given by a member of the faculty

of medicine. In Poitiers (1588) only those candidates who had attended lectures on the art and science of pharmacy for a year could become masters of pharmacy. In the same year the pharmacists of Montpellier established a collection of drugs and made Bernardhin Duranc, one of their members, curator with the obligation to display and explain the whole materia medica to the students three times a year. Urdang and Kremers claim that he was the first practising pharmacist to become officially a member of the teaching staff of any European university.²⁷ At Montpellier a chair of surgery and pharmacy was created in 1601 and one of pharmaceutical chemistry in 1675, whilst in the capital the garden of the apothecaries was founded in 1576 and the better known Jardin du Roi in 1635. Many famous apothecaries, especially those with leanings towards chemistry, supplemented these courses with private ones, men such as Lefebvre and Lemery in the seventeenth century and Rouelle and Baume in the eighteenth. More than one attempt was made by the Parisian pharmacists to set up organised official academic instruction but they had to be abandoned because of fierce opposition from the physicians. Success was not fully attained until the French Revolution.

Although examinations of competency were required in Germany from an early date, indeed the physicians of Bavaria after 1595 set oral, written and practical examinations for pharmacy students, the first obligatory tests of a fixed course of study were not set until 1725 in Prussia. In order to be a pharmacist of the first class the candidate had to attend a course at the Collegium medico-chirurgicum in Berlin, an institution which had been founded in 1718 primarily for the education of military physicians and surgeons. In Germany, as in France, private institutes were set up such as that of the pharmacist Johannes Bartholomaeus Trommsdorff in Erfurt and Johann Christian Wiegler in Langensalza, Thuringia.²⁸

There is no doubt that London was all through the period under review the main centre of pharmaceutical, and for that matter of surgical, education, a fact which was well understood at the time of the union of barbers and surgeons in 1540. (p.32) An examination of the bindings of either company shows that apprentices came from all over England, and is particularly apparent in the case of apothecaries. Many returned to practise in their own district and there set up a dynasty of apothecaries as did the Denmans, whilst others practised in London and one imagines transmitted back to their friends and relations in the same profession the latest developments of the capital. The standards in the provinces must have varied from the good to the abominable. It would seem only too true that the College of Physicians exercised two yardsticks, one for London and its suburbs, and another for the country. On 25 June 1694 Thomas Turberville presented himself to the College to be examined for the licentiate but failed in his therapeutics, nevertheless on his promising to go to Wales and practise there for some years before practising in London he gained his licence.²⁹ Dr. William Briggs, (M.D., oculist and physician in ordinary to William III) when a junior fellow received a letter of complaint from Dr. Gostlin, the master of Caius, about the stupid and unskilful men licensed for country practise by the College.³⁰

John Ward, who, as has been seen, had an excellent training in medicine at Oxford, largely by his own initiative, in fact never took his M.D. as he forsook medicine for the church. In 1663 he obtained a living at Stratford-on-Avon and there not only looked after the spiritual well being of his flock but treated their bodily ailments as well. Technically he was an empiric but his training was no whit the worse than most fellows of the College and better than most.

Many believed that any educated man could become proficient in medicine, as was written in 1652, "Yet it is easy for any scholar to attaine to such a measure of Physick as may be of much use to him both for himself and others", which could be attained by seeing one dissection, reading Fernel and a herbal, and studying the native simples rather than the apothecaries' imported drugs.³¹ Clergymen commonly practised medicine either because of economic necessity or as a duty to God, or because of an adherence to an unacceptable religious belief.

Luke Cranwell, of Loughborough Grammar School and Christ's College, Cambridge, was ejected from St. Peter's church, Derby by the Act of Uniformity, but by all accounts successfully practised medicine in the nearby little town of Kegworth until he died in 1683.³² John Angell the younger who probably obtained his M.A. of Magdalen Hall, Oxford, in 1625 became a schoolmaster at Leicester and keeper of the town library, then after leaving the free school became vicar of St. Nicholas in 1638. Unlike his relative and namesake he was not well thought of by the Puritans of the town, and by 1642 although still technically vicar had turned to the profession of physician; a practice he continued in even when the easier time of the Restoration came.³³ These were men who were driven to it by necessity but with Dr. Clegg of Chapel en le Frith, although he frankly admitted its use in supplementing his income, there were other forces at work too.

James Clegg, born 1679 near Rochdale, was educated from the age of 15 to 18 at the Reverend Frankland's dissenting academy at Rathmel. He was destined for the ministry and was ordained in 1703 at Malcoff, Chapel. In a letter written to the Reverend Calamy in 1728 he explained at length why he had decided to take up the practice of physic. The idea seems to have been put into his head by Samuel Bagshaw of Ford who thought many

of the poor died for want of 'a little seasonable help.' In his diary he acknowledged the help Dr. Adam Holland of Macclesfield had given him in his medical studies and he certainly possessed Quincy's translation of Sanctorius' aphorisms, but other than this little is known of his training. Both Edinburgh and Glasgow refused him a degree but in October 1729, to his great satisfaction, he was granted an M.D. by Aberdeen.³⁴ Not only the poor received his ministrations but many families 'of better note' such as the Bagshawes of The Oaks, Norton and Joshua Wood of Bowden Hall. He travelled widely, visiting patients in Derby, Mansfield and Gainsborough, Knutsford and Macclesfield. From the details in his diary his treatment was simple for the day and on the whole successful, particularly in cases of smallpox. His surgical work was chiefly confined to dealing with fractures. He also appears to have had an assistant Edward Bennett, who in later years described himself as a surgeon. He probably inherited Clegg's practice on the latter's death in 1755, and was the ancestor of the Bennetts of Stodhart, medical men for a century.³⁵

These men Ward, Cranwell, Angell and Clegg were not, and never claimed to be, apothecaries; they termed themselves physicians. Their acquaintance with medical education varied from the best of the day, as in the case of Ward, to the mere gathering together of common-sense folk medicine, as with Clegg, but because they had a degree, whether one in the Arts or one bought from Aberdeen, there is a tendency to give them a greater measure of respect than the 'mere' shop-keeping apothecary. Beyond the fact that he learned his profession by apprenticeship there is little information on the training of the provincial apothecary. Fortunately the frequent letters which passed between Richard Pulteney and his friends give quite a clear picture of how a number of young men

tried to fit themselves for their future profession.

Richard Pulteney was born in Loughborough, Leicestershire in 1730, the son of Dissenters. He was educated at the local grammar school which, like many another at that period was in a state of decline, probably in this case enhanced by the long headship of Samuel Martin, who died in harness in 1749 aged 74. Years later Pulteney wrote to 'Sir' John Hill that, "The literary part of my education in the early part of my life was greatly circumscribed."³⁶ Richard was a studious boy with a great love of books but, even in the cities, in the eighteenth century there was a paucity of them; letters are full of requests to friends to try and buy them some much desired volumes. When obtained they were lent round a circle of friends and the borrower, if he could find the time, would copy out those chapters which particularly interested him. Richard from the age of eleven made abstracts from books which dealt with travel, philology and botany. His writing is clear and neat, if in his earlier abstracts rather immature, and he obviously delighted in reproducing many of the maps.³⁷

There is no record of his binding to Mr. Harris an apothecary of Loughborough, but it probably took place in 1745 or 6. Nothing is known of his apprentice master but very much more of his son Thomas, a cheerful, amusing and intelligent young man and a close friend of Richard. Presumably Thomas received his initial training from his father but by 1747 he was under the tutorship of an apothecary in Leicester. For five years the two apprentices wrote at frequent intervals to each other, exchanging views, experiences and text books.

On 21 July 1747 Thomas wrote a letter at 'past 1 o'clock' and hardly able to keep his eyes open, (due to the fact " ... my man has took his pleasure today and I've weighed and curs'd sugars) to tell Richard that he

had found a copy of Mead's De imperio in Unwin's shop. It was priced at the exorbitant sum of four shillings so he suggested that they should buy it between them even though the bookseller admitted it was very dear. The dealer was trying to be accommodating because he had told Harris that if the book were not sold then he could have it all Sunday, whereupon Tom would send a report of its contents to Pulteney by the newsman.

Harris also tried to answer his correspondent's query as to why a dog had not died when a mixture of nux vomica and opium had been administered. The following year they were both much concerned as to the merits of vipers and their venom; references were made to Mead's views.³⁸ Thomas Harris had been noting the incidence of fits in infants. In his experience the babies were mostly affected at the full and change of the moon, and he wondered if, " ... the Luminaries have any certain influence over the human body", but was sceptical. A week later writing on the same subject, he concluded that infant convulsions were due to too much water paps and Lac Humanum. He treated them with absorbents such as red coral, and laxatives of the syrup of violets or rhubarb type. He enquired of an old experienced apothecary what he thought was the reason for Mead's 'Imperium Lunae', who had replied that it was but an old woman's tale. Harris was not entirely satisfied with the answer. He felt there must be " ... some reason for such a change and sudden alteration in the human body", and wondered just what was the mechanism involved. He went on to add that the solution to the problem, " ... must be the only way to perform the cure; if you know not this, how can you order any medicine, for it seems the most rational to me to consult with the disease before you cure."³⁹

They discussed the merits of Florentine olive oil, some problem which Pulteney had encountered with Aethiops mineral and the dangers of

sophisticated gentian root. Gunthorpe a local druggist had sold some to two women, " ... they infused it in white wine and took a small dose, which has almost killed 'em, though by the extraordinary care of an Apothecary they are perfectly recovered." John Fox, another Leicester apprentice, thought he had found some amongst his master's Rad. Gentian, and he and Harris intended to try it on the first dog they could obtain.⁴⁰ They liked to start their letters with a Latin tag or occasionally a Greek one, sometimes continuing in the former language. On 4 December 1748 Thomas began with 'Ophilobotanicos' and then told Richard he had decided to have his three volumes of Tournefort bound at a cost of thirteen shillings and would then send one of them to Pulteney by Dicey's man. In return he would like to have Dr. Deering's treatise on small-pox. "Pray tell me why the small pox can be had but once, do you ever think that ever any one had 'em twice?" The questions of contagion and infection obviously interested Harris. In another letter he was concerned to know, " ... if the corrupted breath of a patient in a high fever taints the ambient air, so that when it comes to be inflated into the lungs causes the same disease in corpore sano ... how does the poisonous air cause the same disease?"⁴¹

Another close friend was James Taylor, the nephew of Hugh Paull, apothecary of Kettering, and of a Mr Statham of Loughborough.⁴² Like Pulteney but unlike Harris, he was a Dissenter and in 1747 was sent to the academy at Kibworth in South Leicestershire. The grammar schools being in disrepute and the English universities passing through one of their less luminous phases the dissenting academies provided possibly the soundest education obtainable, if somewhat over-laden with religious instruction.

On 7 July 1747 James wrote that he planned to stay at Kibworth for a year, during which time he would study not only the classics but modern languages as well. It was originally intended that he should have a career in medicine and he told Richard that he was to study, "Natural and Moral Philosophy which will not be intermixt with the Physical branch of any kind whatsoever, so that when I go to Edinburgh I shall have nothing to do but set about Physick entirely and make that with all its branches my sole study. I think this is very rational and I much approve of it not to mix Physick at an Academy with other studies." Through him Pulteney was able to borrow a good variety of books, including the Life of Colonel Gardener, Martin's Philosophae Britannica, and Gerard's Herbal.

The following year Taylor went to Dr. Dodderidge's famous academy at Northampton and on 17 December gave his friend a very detailed account of life there and the curriculum laid down for the full four years. This is of interest as it must have formed the basis of the general education received by many apothecaries, if they were Dissenters, and who, if they proceeded to a university degree, would ultimately travel to Scotland or Holland. In the junior class the syllabus consisted of the classics, geography and shorthand, mathematics, logic and oratory; the second year they concerned themselves with ethics, evidences of Christianity, ecclesiastical history, Jewish antiquities, natural philosophy and astronomy. The third year was similar to the second except for the addition of algebra and metaphysics; the fourth was heavily orientated towards religious studies and was usually only taken by those who were to become ministers.⁴³

Richard Pulteney came to know John Aiken teacher of French at Kibworth and later classical tutor at the new academy at Warrington, (probably through Taylor,) and because of his deep interest in botany

corresponded with Dr George Deering, John Blackstone, 'Sir' John Hill, William Hudson and above all William Watson. From these letters it can be seen that, though he had his own business by the time he was 22, his education was not regarded as finished. Watson gave the young apothecary much sage advice on how to extend his medical and chemical knowledge. He recommended that Pulteney should read Dr. Lucas's Essay on Water and Dr. Home's work on bleaching, and told him that Dr. Russell's treatise on the glands was a 'must' for all medical practitioners.⁴⁴ Rather earlier in 1755 Pulteney had consulted Watson professionally on the use of electricity in medicine having read in the Gentlemen's Mag of the removal of 'ganglia' by 'electrification'.⁴⁵ Whether Richard had carried out experiments in electrostatics is not known but Harris certainly had, for he had written on 15 June 1752, "I had the opportunity of trying some electrical experiments with one of my globes put in a clockmaker's lathe and gave myself such a shock as I would not repeat for all the world."

Pulteney had at least three apprentices, a Mr. Godkin, Timothy Bentley and Thomas Arnold, when he was at Leicester. He seems to have had the happiest relations with them and no doubt was as good an apprentice master as lay in his power, but certainly Bentley and Arnold must have regarded his shop and his surgical and medical practice as just a step towards their further education. Bentley, the son of a Leicester banker and mercer, in 1760 went to Warrington Academy and whilst there decided to proceed to Edinburgh in the following year.⁴⁶ The year after that he was joined by Thomas Arnold. Both wrote long letters to their late master, telling him of their courses and professors with which they seemed well able to cope, but this interesting information must be regarded as being well within the realm of the physician rather than that of the apothecary.

In due course, when Pulteney was 34 he followed his two apprentices to Edinburgh, and after some opposition from the students, he too obtained an M.D. Like Bentley he planned to go to Leyden for a few weeks but in the end settled for an extra-licentiate ship from the College of Physicians and practised as a physician in Blandford Forum, Dorset. Beyond the fact that he had presumably no longer an open shop and could certainly charge higher fees, one feels there was little difference in his practice. Undoubtedly he relished his greater freedom, all botanist-apothecaries grumbled at the confinement of a shop, but it would not be true to say that his life for the first time became cultured. From his correspondence it is obvious that many apothecaries, if not all, were men of culture. Their interests covered a broad spectrum, they wrote letters on subjects ranging from classical literature in the original Greek or Latin to religion, from botany to the influence of Lord Bute on the young king.

Thomas Harris had literary interests. He told Pulteney in July 1750 that he had been reading Juvenal. "I must confess I have never read anything that afforded me so much pleasure in my life though I am forced to deny myself ... I have rose early and sat up late {so} that I find this month past it has surprisingly weakened my eyes. I cannot without great uneasiness read above half an hour by a candle. I should be glad to know if you think any kind of glasses would be of any service."⁴⁷ Possibly Pulteney was interested in optics, as a couple of years earlier he had asked Thomas the value of a prism, to which he had replied, "A prism is worth five shillings I can't get a tube made yet, the Glass house is stop't working."⁴⁸

John Aikin when writing from Warrington Academy, to his friend said, "I was (as you expected) agreeably surprised to Mr Bentley ... I am

astonished at the improvement in the Greek which he reads with great readiness, as if he had studied it for some years under an able master. I less wonder at the progress he has made in botany, though it be really very great, as he had the advantage of your instructions."⁴⁹ In May 1761 Timothy told Pulteney that he "had not gone through a regular course of lectures and experiments in natural philosophy but have been acquainting myself with the theory." He was about to return to Leicester in order to discuss his future plans and asked Pulteney to procure for him a Hippocrates and Galen in the original Greek with the Latin version, in the best edition available.⁵⁰

Bentley's trip of three hundred miles to Edinburgh was full of interest for him. "York and Durham Cathedrals were the most entertaining sight I met with ... which are very grand and magnificent. The very stones before the shrine in Durham cathedral are plainly hollowed by the scraping of the feet of those who bowed to St. Cuthbert, to whom the shrine was dedicated, and the innumerable minor saints that were placed around, as it were waiting on him."⁵¹ In similar vein was the letter from James Taylor when he made his first journey to Northampton. "Really to give you an impartial account of this famous borough, I think it exceeds Leicester in the uniformity of the Drapery and the Market Hill, and the church called All Hallows is in a far nobler taste than any I saw in Leicester. However Leicester will outvie Northampton in the stateliness and loftness of houses, in the extent of the town, the riches of the inhabitants and the great trade it carries on with most of the principal towns of Great Britain. To be sure Northampton has nothing to produce against Leicester but some indifferent houses set off by the regularity of their buildings."⁵²

Pulteney wrote his first articles for the Gentleman's Magazine

and when his fortunes were at very low ebb begged Watson to help in his election to that Mecca of learning the Royal Society.⁵³ He was by no means the first apothecary to be elected to that body. A founder member was Nicasius Lefebvre, demonstrator of chemistry at the Jardin du Roi in Paris, and later Professor of Chemistry to Charles II on his restoration. Although not fellows, the apothecaries of Oxford, John Crosse, Tillyard and Clerk, should be mentioned as they were so closely associated with the early members of Gresham College when it was exiled to Oxford.

The second apothecary to be elected was John Houghton in 1679. His particular interests were in the improvement of husbandry and trade, for which he produced a weekly journal. Sixteen years later he was followed by the botanists, Samuel Doody and James Petiver, then by James Sherard in 1709 and Isaac Rand in 1719 two more botanists. The eighteenth century saw the election of Sylvanus Bevan (1725), John Martyn (1727), John Chandler (1735), John Maude (1738, actually a chemist) and William Watson (1741).⁵⁴

Of perhaps even greater interest is the Gentlemen's Society of Spalding.⁵⁵ It was established in 1710 and so claims - it still exists - to be the oldest such society outside London and the universities. It termed itself a 'cell' of the Society of Antiquaries of London of which most of its members were fellows. According to Gough and Nichols it arose as a result of a few gentlemen of the town meeting in a coffee house to pass away an hour and read new publications. The founder of the society was Maurice Johnson of Spalding and the Inner Temple, the first president and secretary for 35 years. They held their meetings on Thursdays throughout the year, first at Younger's coffee house in the abbey yard, and then in a private house. In the 1740's they took over part of the

old monastery and fitted it up with a library and a museum. In 1750 it is related that the meetings began about four o'clock and lasted until 10 o'clock.

They did not confine themselves to antiquities, " ... but made discoveries in Natural History and improvements in Arts and Sciences in general ... they only excluded politics."⁵⁶ The writers went on to add that the apothecaries had a physic-garden in Spalding in 1745 and that the society had a fine hortus siccus. On admission members gave a valuable book and paid a shilling per meeting and twelve shillings a year subscription. A list is given for members, both regular and honorary, for the years from 1710 to 1753. It included Isaac Newton, Hans Sloane, John Evelyn, Henry, Earl of Coleraine, Mr Vertue the engraver, the two Wesleys, father and son, Mr. Chapman, master of the free grammar school of Moulton near Spalding, and a Mr. Rand who may have been the director of the Chelsea garden. In 1729 Johnson told a friend that they had recently admitted two doctors of divinity, one of them 'head' of Queen's College, Oxford, two seamen, one lawyer, a captain, two surgeons and five other gentlemen whereby they were enabled to carry on a correspondence in most parts of the world. The number of members who practised medicine is noticeable, not least of whom were apothecaries and surgeons.

Physicians.

Robert Mitchell, M.D. (Leyden); Francis Bellinger, licentiate of College; Walter Lynn, M.D.; Richard Middleton Massey, M.D. (St. Andrews); Charles Balguy of Peterborough, M.D.; George Bolton, M.D., Magdalen College, Cambridge of Bolton; Dixon Coleby of Stamford, M.D.; Pannaoiti Condoiti, physician to the empress of Russia; Symon Degg, F.R.S. M.D.; Charles Dymock of Boston M.D.; George Edwards, fellow of College;

John Green of Spalding, was at St. John's Cambridge but does not appear to have qualified, was Johnson's son-in-law; John King of Stamford, M.D.; Walter Lynn, M.B. of Peterhouse, Cambridge; Richard Mead, M.D.; John Mitchell of London, M.D.; Robert Mitchell of Epsom, M.D. (Leyden); Cromwell Mortimer, F.R.S., M.D.; Thomas Stack, assistant to Mead; Alexander Stewart F.R.S., M.D.; William Stukeley M.D.; Rev. Chas. Townshend, curate of Spalding and Deeping, M.B. of Emanuel, Cambridge; Thomas Wallis of Stamford, M.D.; James Jurin, M.D., F.R.S.

Surgeons

Claudius Amyand, serjeant surgeon to king; Michael Cox, was 'operator' for the society for a number of years; Thomas Curling of High Gats; Harry Bayley of Spalding; Edmund Chapman at Grymsthorpe; Francis Drake of York, author of a history of York; Edward Green of Newgate Street, London; William Green; Robert Guy of St. Bartholomew's; John Hepburn of Stamford; Dale Ingram, surgeon and man-midwife of Tower Hill; Michael Mitchell of London; René Mitchell of Spalding; John Roberts of Canterbury, and Dawson Tavernor.

Apothecaries

Peter Bold; James Brecknock of Holbeach; Heneage Browne; Isaac Heath; 'Sir' John Hill; Calamy Ives of Wisbech; John Rogerson, and John Ward of Spalding.

There were two druggists, Edward Pincke and Anselm Beaumont.⁵⁷ Other shopkeepers are noticeable by their absence.

Further information on the apothecaries cultural background can be gathered from the book subscription project currently in progress at the university of Newcastle upon Tyne. A preliminary guide to apothecaries in the book subscription lists was produced for the Cambridge conference

of the British Society for the History of Pharmacy in 1974. It is by no means complete as names had been extracted from only some 90 lists out of the nearly 5,000 known, nor had it been edited. Names were only given if there were a designation such as chemist, druggist, surgeon or surgeon and apothecary, or apothecary. The last was by far the most frequent. Between the years 1709 and 1748 there were apothecaries and surgeon-apothecaries in England and Wales who subscribed to 75 different publications. They ranged from James Durham's Christ crucify'd to Pemberton's An essay for the further improvement of dancing, from John Strype's A survey of ... London and Westminster to Peter Barwick's Vita Johannis Barwick. Religion was not overwhelmingly popular though John Sturt's The book of common prayer, George Smalridge's Sixty sermons..., and John Walker's ... Sufferings of the clergy, were all represented. Natural history had its following, for example Eleazor Albin's Natural history of spiders, and his work on English insects, but there is no doubt that history had by far the greatest number of adherents. Thomas Hearne's books had a faithful following, whilst others included Simon Ockley's History of the Saracens, The history of the royal genealogy of Spain by Thomas Richers and Bulstrode Whitelocke's Memorials of the English affairs ... of King Charles. Silvanus Bevan, Rice Charlton of Bristol and John Wilmer all subscribed to A view of Sir Isaac Newton's philosophy by Henry Pemberton, and John Markham of Paternoster Row was such a bookworm that he subscribed to no less than 21 books between 1716 and 1728.

John Sherwen was probably professionally fairly typical of the ordinary surgeon and apothecary or general practitioner of the country districts of England but his literary interests were likely to have been rather more extensive than most. To what degree he can be used as a

yardstick for the ordinary apothecary's cultural interests is difficult to say; possibly he may not have been so very different from the general ruck, after all young Tom Harris delighted to write burlesques and skits.

Little is known of Sherwen's early life or training. He is said to have been born in Cumberland in 1749 and it is very probable that his early professional education was with an Anthony Harrison of Penrith, who became the apprenticemaster of a John Sherwin (sic) for five years in 1764.⁵⁸ Dr H.J. Hunter wrote that he was sent North for his medical studies, something which Sherwen seems to confirm when he wrote an elegy to a fellow student, Thomas Airey, who had died at Edinburgh in 1768.⁵⁹ It has also been suggested that he received training at St. Thomas's and the medical school there has records of a John Sherwen being admitted on 4 February 1669.⁶⁰ Four months later on 1 June he passed as a surgeon to an Indiaman at the Court of Examiners of the London Company of Surgeons.⁶¹ Sherwen himself relates in the introduction of The medical spectator, a journal which he is generally accredited with launching, that "he hath four times crossed the Equinoctial Line and hath as often been seen meditating upon the Banks of the Ganges." It was not until he had been in practice for many years that he obtained an M.D. from Aberdeen in 1798, and that he became an extra licentiate of the London College of Physicians in 1802.

He settled in Enfield, Middlesex in the early 1770's. There he became friendly with Richard Gough, the antiquarian, (1735-1809) and Isaac D'Israeli (1766-1848). They formed a literary trio, exchanging their poetical efforts under the names of three of the muses, Clio (Gough), Euterpe (D'Israeli) and Melpomene (Sherwen). Sherwen from his youth

had been an admirer of Shakespeare, and had made use of his knowledge of Cumbrian and Scottish dialect to explain obscure phrases. He was also a fervid protagonist for the authenticity of Thomas Rowley's poems in the Rowley/Chatterton controversy which raged for many years. Probably because of this abiding interest of the rough and unedited verses still extant of the three men, those of Sherwen's are by far the best. He was fond of the rhyming couplet and some of his work would not altogether disgrace Pope.

"So t'other Day in deep Debate

The Lords of Enfield gravely sat [e] ;

Doubtless inspir'd with anxious Care

Some portion of the Rates to Spare.

When all at once the Court admire

Th'obtruding Form of noisy Squire.

Genius of nonsense, quick upsprung,

And settles on his silly Tongue,

Spluttring responsive to his Will,

Unanswerable Jargon still ---

Six Inch Incroachment - shameful Jobs,

Expensive Sign post - dirty Dubs -

Turneps and Chace and common Fields,

A Fund of Noise and Nonsense yields.

Nor ceas'd he till a plan was laid,

And thus the Fool a Jest was made.

"The Jury, Sir, with common Voice,

On you have fix'd their prudent Choice,

My Duty and my Pleasure both

Administers the usual Oath"

The usual Oath the Noodle took,
 And grin [n] 'd Content - and sma [c] k'd the Boot
 Nor Question asks - nor Fraud suspects,
 But Office of Renown expects.
 Laugh [ter] loudly dins thro' all the Court,
 Dullness itself enjoys the Sport.
 When oh! with rueful length of Face,
 The Petty Constable is told his place."⁶²

Perhaps the wisest assessment of the problem might be left to a contemporary. In 1682 Hugh Squier wrote, "In my Study at Westminster on St. Stephen's Day. Resolved: That there shall be a school house built in South Molton Church Yard (if there be not found a more convenient Place for it in the town) of stonework all most as strong as a little chapel or church wall ... to contain 150 boys. ... And this shall be no horn book school to teach little children to read not shall any one be admitted but such as can read in the psalter before they are admitted, not shall it be to teach persons the Latin tongue or the rules of Grammar, but this school shall be chiefly to teach good writing and Arithmetick ... Arithmetick is as necessary as our daily bread, or salt unto our meat, the thing which every man is making use of every hour of all his life. ..." To Squier it was the saddest thing "To see the godly good old wife (in the midst of all her other pressing affairs) take pains to pack her boys away to school ... there to learn, not to read divinity nor so much as history nor the tale of Tom Thumb, which would prove far more profitable then some Horum, harum, horum, genetivo, hujus huick etc., when it is sure they can maintain them but two years at the school in all ... I say either go on and perfect Grammar with the Latin tongue, or else 'tis madness to begin, for unless a man means to be a divine, or a lawyer or an apothecary or a gentleman he makes no use thereof, but forgets again all that he learnt."⁶³

Notes and references.

1. G.Clark, A history of the Royal College of Physicians of London,
Oxford, Clarendon Press, 1964, pp.609-10.
2. R.Pilkington, Robert Boyle, father of chemistry, London, Murray,
1959, p.143.
3. M.G.Davies, The enforcement of English apprenticeship, 1563-1642,
Oxford; University Press, 1971, p.9.;
L.A. Clarkson, The pre-industrial economy
in England, 1500-1750, London, Batsford,
1971, p.170.
4. Inland Revenue apprenticeship records, passim.
5. C.Wall, H.C.Cameron & E.A.Underwood, A history of the Worshipful
Society of the Apothecaries of London, Oxford,
University Press, 1963, p.78.
6. C.R.B. Barrett, The history of the Society of Apothecaries of London,
London, Eliot Stock, 1905, p.103 6 February 1683.
Nor were the London apothecaries the only
ones to insist on a proficiency in Latin.
The bye-laws of the Barber Surgeons' Company,
revised in 1709 and still in force in 1745,
stated that an apprentice had to pass an
examination in Latin at the Hall before he
could be bound. See C.Wall, The history of the
Surgeons' Company, 1745-1800, London,
Hutchinson's Scientific and Technical
publications, 1937, pp.49,55,81,120.
S.Young, Annals of the Barber-Surgeons of London,
London, Blades, East & Blades 1890. p.354,
Minute of 7 March 1727.

7. The Apothecaries' Society court minutes, Ms. 8200/1, f.360r,
10 December 1636.
8. Ibid., Ms. 8200/2, f.59v.
9. Ibid., Ms. 8200/1, f.452v. 11 August 1646.
10. Information supplied by Dr.T.D.Whittet who has examined these reports.
11. Ms. 8200/2, f.256r.
12. Cameron, op.cit., p.164.
13. Ibid., p.167.
14. Dictionary of national biography, XLVII:268-9.
15. Cameron, op.cit., p.171.
16. Ibid., p.174.
17. F.C.Pybus, 'The company of barber surgeons and tallow chandlers of
Newcastle-on-Tyne, Proc. Royal Soc. Med., 1928,
XX-XXV:287-296 pp.290,288.
18. Cameron, op.cit., p.79; Clarke, op.cit., p.438.
19. C.Haskins, The ancient trade guilds and companies of Salisbury,
Salisbury, Bennett, 1912 p.367.
20. Pybus, op.cit., p.291.
21. Cameron, op.cit., p.79.
22. A.H.T.Robb-Smith, "Cambridge Medicine" in A.G.Debus (editor),
Medicine in seventeenth century England,
London, University of California, 1974,
pp.328-369 see pp.343-5.
23. R.G.Frank, Jr., 'The John Ward diaries: mirror of seventeenth
century science and medicine', J.Hist. Med.,
1974, XXIX:147-80, see pp.152-6, 159-60.
24. The Dictionary of national biography, X:192-4.
25. Letter in the writer's possession.

26. Dictionary of national biography, XLVII:112.
27. E. Kremers & G. Urdang, History of pharmacy, Wisconsin, J.B. Lippincott, 1976, 4th edition (revised G. Sonnedecker), p.76.
28. Ibid., pp.97, 428-9. In 1780 pharmacist Johann Goettling edited an annual called the Pocketbook for chemist and pharmacist, and in 1793 J.B. Trommsdorff began to edit his Journal der Pharmazie, possibly pharmacy's earliest scientific journal.
29. Clark, op.cit., p.518.
30. Ibid., p.350n. Dr. Briggs' wife's cousin was daughter to Sir Thomas Witherley M.D., and married Thomas Bromfield the apothecary. Briggs' own daughter Mary married Bromfield's son, a physician.
31. Ibid., pp.248-9.
32. A. White, History of the Loughborough Endowed Schools, Loughborough, Loughborough Grammar School, 1969, p.82.
33. J. Simon, 'The two John Angels', Trans. Leics. Arch. & Hist. Soc., 1955, 31:35-50. see pp.45-6.
34. V.S. Doe (editor), The diary of James Clegg of Chapel-en-le-Frith, 1708-55, Pt.1, 1708-36, Derbyshire Record Society, Matlock, 1978, p.xliii.
He was recommended for the degree by Dr. Nettleton of Halifax, Dr. Dixon of Bolton and Dr. Latham of Finders.
35. W. Braylesford Bunting, Chapel-en-le-Frith: its history and its people, Manchester, Sherratt & Hughes, 1940, p.226.

36. The Pulteney correspondence is held at the library of the Linnean Society. Copy of letter to John Hill dated February 1758.
37. Pulteney's abstracts are also kept in the Linnean Society's library.
38. Letter of 2 July 1748, Harris to Pulteney.
39. Letter of 10 July 1748, Harris to Pulteney.
40. Letter of 15 October ?1749, Harris to Pulteney.
41. Letter of 23 October ?1749, Harris to Pulteney.
42. Information contained in a notebook relating to the letters compiled by R.H.Jeffers. Kept at Linnean Society Library.
43. Letter of 17 December 1748, Taylor to Pulteney.
44. Letter of 17 July 1756, Watson to Pulteney.
45. Letter of 20 September 1755, Watson to Pulteney.
46. Letter of 22 May 1761, Bentley to Pulteney.
47. Letter of 28 July 1750, Harris to Pulteney.
48. Letter of 7 September 1748, Harris to Pulteney.
49. Letter of 30 June 1760, Aikin to Pulteney.
50. Letter of 22 May 1761, Bentley to Pulteney.
51. Letter of 4 December 1761, Bentley to Pulteney.
52. Undated letter, summer 1748, Taylor to Pulteney.
53. Letters of 14 February 1761, 11 December 1762, Watson to Pulteney.
54. T.D.Whittet, 'Pharmaceutical fellows of the Royal Society', Pharm. Journ., 1960, 185:79-82.
55. R.Gough & J.Nichols, 'The Gentlemen's Society at Spalding', in J.Nichols, Literary anecdotes of the eighteenth century, London, J.Nichols, 1812, 6:1-162, see list of members pp.69-122. In 1712

there were twelve regular members and eighteen extra-regular members; subsequently there was 'running' list of 355.

56. Dr. Middleton Massey gives a rather different picture when he wrote to James Petiver, " ... as for subscribing to yr. British plants my circumstances will not give me leave and the gentlemen of the Club are not at all curious in naturall history ... " See Sloane Mss., Ms. 4067, f.48.
57. Edward Pincke formed a trading partnership with his apprentice Anthony Kingsley, wholesale druggist, and a journeyman Anselm Beaumont in 1716.
See L.G.Matthews, History of pharmacy in Britain, Edinburgh, E. & S. Livingstone, 1962, p.215.
58. Inland Revenue apprenticeship records, I.R./1/56, f.^x15, January 1767.
Harrison had a number of apprentices in the years from 1767 to 1783. He may possibly have been the same Anthony Harrison as was apprenticed to Richard Conyers of Yarm in 1722 and took an apprentice in that town in 1743.
See I.R./1/48, f.2, I.R./1/50, f.180.
59. The Bath and Bristol Magazine, 3:422.
60. Telephone communication from the archivist of St. Thomas's Medical School.; Dictionary of national biography, LII:99-100.
61. Information supplied by E.H. Cornelius, librarian, The Royal College of Surgeons. On 17 October he obtained the diploma of membership of the Company of Surgeons.

62. The London borough of Enfield local history department, Palmer's Green,
library The Gough Mss.
63. J.Cock, Records of ye antient borough of South Molton in ye county
of Devon, South Molton, for the author,
1893, pp.176-9.

CHAPTER VSTATUS AND SOCIAL POSITION.

The standard answer to this question is embodied in the statement by Hamilton that in 1660, " ... a physician was a gentleman, while apothecaries and surgeons were mere craftsmen." This is further elaborated in a section on the apothecaries. "At that time (1617) they were compounders and dispensers of medicine, and the stigma of 'tradesmen' clung to them long after the sale of drugs had ceased to be the main function of the individual apothecary, though not of the company." She then goes on to say that after the Civil War the status of the apothecary was rising, but "The apothecaries seem to have been mainly sons of small shopkeepers, yeomen and respectable craftsmen. In towns the practising apothecary was of low status; but in the country, where he was usually the only doctor, he was sometimes a man of good family who had qualified in the cheapest and most useful way; there he might take his position according to his family rather than according to his occupation. But the average apothecary did not come of a good or wealthy family; indeed the profession was one way for the lowest classes to climb."¹ A view with which the physicians of the College would have concurred only too readily. As Cameron has written "The Physicians decried the Apothecaries as men ignorant, unlettered, and unlearned in the science of medicine and in approbrium called them empirics," and quotes from Charles Goodall's The Royal College of Physicians, (1684) "We have to deal with a sort of men not of Academical, but Mechanick education; who being either actually engaged in the late Rebellion, or bred up in some mean and contemptible trades, were never taught the duty they owe to God or their Sovereign, to their Native Country or the Laws thereof."²

The jealous and snobbish diatribes of the frightened fellows of the College have echoed and re-echoed down through the ages and can be heard to this day.

"Just as a tinker-soldier or a sailor-ploughboy is impossible, so a gentleman-apothecary is unthinkable." "Edmund Withering, who for his station and time was wealthy met and even more unusually married Miss Hector, the sister of Dr. Brooke Hector of Lichfield."³

"At this time (1768) ... The apothecaries of the era were not recognised as professional men, and, in an age of quacks, they were barely respectable."⁴

"George Cooke of Fitton, the object of Corbett's frequent gibes because he had been an apothecary, made his submission and was restored to his living."⁵

The denigration of the apothecaries continued with a group who were in many ways their successors, namely, the chemists and druggists. W.J. Reader in his book on the rise of the professional classes in nineteenth century England, when considering the effect of the Medical Act of 1886, has written that it " ... finally shut out the chemists and druggists from the medical profession" and that " ... their separation from the doctors, though undesired, was not undignified, but in the nature of things they could never escape the taint of retail trade."⁶

Some two years ago the pharmacists of this country were in receipt of an unsolicited piece of advice from a minister of the Crown. "Pharmacy as a profession was unique in that it brought together both professional and trading activities ... the growth of National Health Service dispensing in economic importance to retail pharmacy has led some to look for a role concerned only with dispensing and allied professional matters. I hope that such thoughts do not arise out of shame for being engaged in selling ... You should be proud of your ability to sell professionally."⁷

There is little doubt that the common view is held that there is a lowering of social status by standing behind the counter of a shop - and that it has always been so. The obvious conclusion to be drawn from this

belief is that these shop-keepers, whether apothecary or pharmacist, must have come from near the bottom rungs of society, that they were ignorant and probably quite unethical, even unscrupulous in their efforts to amass money because they had no professional standards, nor did they associate with those who had.

In order to determine the validity of this view it is necessary to examine the social pattern of England, one that is unique within the context of Europe.

Charles Wilson, a social and economic historian, has written, "The society [of the period 1603-1763] was roughly stratified by contemporaries into the nobility, gentry, merchants, professions, yeomen, freeholders, customary tenants, leaseholders, shopkeepers, craftsmen, labourers and that great mass - perhaps a third or more of the total - they called 'the poor'. Yet nobles apart, these labels did not imply legal definition of social status, though a man might be labelled knight, esquire, gentleman, yeoman or husbandman, in order to be assessed when a direct tax was being raised. Throughout the period there was a remarkable degree of social mobility, especially between the middle and top ranges of society. Many families contained representatives of the peerage, gentry, merchants, and professions, to say nothing of poor relations, at the same moment in time. ... The social categories invented by nineteenth-century historians - feudal, bourgeois, working class - do not sit happily on such a society. The simple idea of large and more or less solid social 'classes' distinguished from each other by different interests is not only unhelpful in interpreting the course of events: it can be positively misleading. Society was not revolutionized, it evolved, and its rich and complex evolution eludes ... the snap judgement."⁸

In England there was no definition of a 'gentleman' any more than there was for a 'yeoman', but for reasons of convenience this has been attempted by Anthony Wagner, Garter King of Arms. The inheritor of a knight's fee, or manor, had never been a knight automatically, but he was usually knighted by his father or his lord after training first as a valet and then an esquire. As time elapsed the financial burdens of knighthood could weigh so heavily that many did not take it up when they came of age, thus the apprentice to knighthood, an esquire, came to mean a man of knightly rank but one who did not intend to become one. Sometime after 1400 the need arose for a general term for a class which centred on the esquires and others who ranked with them, for this the designation 'gentleman' or 'gentry' came to be used.⁹ The valet or yeoman was ranked immediately below the esquire and was regarded as the knight's servant or retainer. In Tudor time the name was applied to the class of country free-holders who came next in rank to the gentry.¹⁰ Rich yeomen were frequently richer than poor gentry and intermarriage was not uncommon.

Trevelyan quotes William Harrison, the Elizabethan parson writing in 1577, as saying, "Whosoever studieth the laws of the realm, whoso abideth in the University giving his mind to his book, or professeth physic and the liberal sciences, or beside his service in the room of a captain in the wars, or good counsel given at home whereby his commonwealth is benefitted, can live without manual labour, and thereto is able and will bear the port, charge and countenance of a gentleman, he shall be called "master", which is the title that men give to esquires and gentlemen, and be reputed a gentleman ever after." His remarks concerning yeomen are equally cogent. "But for the most part the yeomen are farmers to gentlemen; and with grazing, frequenting of markets and keeping of servants (not idle servants such as gentlemen do, but such as get their

own and part of their master's living) so come to great wealth, in so much that many of them are able and do buy the lands of unthrifty gentlemen, and often setting their sons to the schools and to the Universities and to the Inns of Court; or otherwise leaving them sufficient lands whereupon they may live without labour, do make them by those means to become gentlemen."¹¹

An Act of Parliament and a book of etiquette of the fifteenth century put the merchants, who were in effect the ruling class of the towns, on a level with the esquires. Some, such as London aldermen, could stand higher and a few of great wealth and power were the equal of any great magnate, as for example was William de la Pole (died 1366), mayor of Hull who was described as 'Lord of Holderness, knight and merchant.'¹² As Trevelyan has said, "Yeomen, merchants and lawyers who had made their fortunes, were perpetually recruiting the ranks of the landed gentry; while the younger sons of the manor-house were apprenticed into industry and trade."¹³ Wilson illuminates this point even further: "Of fifty-three Lord Mayors of London between 1591 and 1640, more than half were born countrymen. Cranfield came from a family of minor country gentry. So did Cokayne. So did Hugh Myddleton and his brother Thomas, a Lord Mayor of London. These and many others reflected the common practice by which the younger sons of the gentry, and even, occasionally, of the peerage, for whom no estate or profession could be found, were apprenticed to trade: 'the boy baptised Septimus or Decimus', as Sir Lewis Namier has said, 'was almost certain to be found in the counting house.' Many of these younger sons came to London, made a fortune in trade or finance and later reverted to their traditional status as country gentlemen.

It is important to note that, to quote Wilson again, "Trade did not derogate from that status [gentry]. A Cheshire gentleman could

describe himself in 1640 as a gentleman by birth and a linen draper by trade. In a case in 1634 a witness said that 'many citizens of great worth and esteem descended of very ancient gentle families, being soap boilers by trade even and yet accounted gentlemen.'¹⁵ Nevertheless, 4 inspite of the flexibility of English social standing the pathway to gentility was not without its snares.

In France nobility was sharply defined and possessed important legal and fiscal privileges, thus the importance of arms as a label gradually lapsed. In England the opposite happened, as there was no legal definition of gentility then the outward marks became more important; as a consequence Defoe could write, 'We see the tradesmen of England as they grow wealthy coming every day to the Heralds' Office, to search for the Coats of Arms of their ancestors, in order to paint them upon their coaches, and engrave them upon their plate, ... or carve them upon the pediments of their new houses; and how often do we see them trace the registers of their families up to the prime nobility, or the most antient gentry of the Kingdom.'¹⁶ Henry VII in 1492 had declared that a grant of arms by Garter King of Arms established the grantee's gentility beyond question. Heraldic visitations had been already established but now the kings of arms were given powers of inquisition to determine whether the bearer was entitled to them either by ancestral right or by the grant of someone of sufficient authority. After 1530 Clarenceux King of Arms in a visitation had to deface or remove any arms that were false or devised without authority. Thereafter until 1686 visitations were made about once every generation when arms and pedigrees were examined; if found to be valid they were entered in the visitation books, if false then the usurpers had to make a disclaimer.¹⁷ By the eighteenth century the whole system of surveillance had broken down which inevitably led to false claims and bitter acrimony.

In 1795 John Mason Good wrote a biased book entitled History of medicine in so far as it relates to the profession of the apothecary, in which he pointed out that apothecaries' profits were no longer attracting sons of respectable families, so making it impossible for apothecaries to demand high premiums for apprenticeships.¹⁸ A study of the inland revenue apprenticeship records of the eighteenth century show that apothecaries, particularly in the first half of the century, could and did obtain sizeable sums as consideration money. In both the London and country districts in the years 1710 to 1712 the sums required were between £40 and £70, the commonest figure being £50; by the end of the century, the term apothecary being usually replaced by that of surgeon and apothecary, the figure was between £50 and £150 or slightly over. The most usual sum was £100 or £105, with £157.10s.0d being another which was frequently demanded. A useful comparison can be made with premiums paid by other professions, crafts and trades. In mid century they were:-

Weavers	£1.10s.0d to £4.
Nailers	£2.10s.0d to £3.
Cordwainers	£3 to £8.
Joiners	£4.4s.0d to £20.
Watchmakers	£10.10s.0d to £15.
Butchers	£6 to £16.
Grocers	£10 to £50.
Sadlers	£25 to £45.
Coachmakers	£30 to £50.
Merchants	£40 to £260.
Attorneys	£100 to £150.
Apothecaries (London)	£50 to £105 (with a maximum of about £300)
Surgeons (London)	£250 to £400 (Hospital surgeons)
and	£30 to £50 (rank and file)
Surgeons & Apothecaries (Provinces)	£40 to £60.

Throughout the century there is a marked contrast between apothecary and barber-surgeon. In the early years the masters of barber-surgeon apprentices received not more than £20 and often no more than £10; a few who were termed 'barber surgeon' but who were in fact 'pure' surgeons, men such as James Ferne or William Cheseldon were in receipt of £180 or £150 which had risen to £210 and £350 respectively by 1730.¹⁹ Towards the end of the century the title barber-surgeon had been largely superseded in favour of surgeon and their status had greatly risen. Few premiums were under £50 and the majority were £50 to £100. The surgeons of the London hospitals who virtually had the Company of Surgeons in their pocket, could command enormous sums.²⁰

As a general rule it is possible to say that the larger the sum of money paid, the higher the social position of the apprentice master and his craft or trade. The revenue records for Surrey between 1710 and 1740 show that sons of gentlemen were in four cases apprenticed (or articulated) to attorneys, which is not unexpected, whilst three were bound to goldsmiths (the bankers of the day), four to apothecaries, three to barber-surgeons and five to mariners.²¹ Members of the London livery companies, merchant-tailors, drapers and haberdashers had three gentlemen's sons apiece, and the stationers had four. In 1713 the two sons of the late William Tourville of Aston, Leicestershire, were placed out as apprentices in London, Henry with Edward Litchfield, citizen and haberdasher, and Thomas with Thomas Nelson, citizen and apothecary. In the first case the consideration money was £80 and that of the second exactly half.²² Clerks, that is clergymen, placed their sons in much the same occupations as gentlemen. Besides mercers, woollen and linen drapers, the lesser merchants, carpenters, tallow chandlers and ironmongers who could all command reasonably

substantial sums for a premium, the gentleman who had hit hard times (or was altogether impatient of a wayward son) could apprentice his offspring to tanners, blacksmiths, butchers, gardeners and curriers and even such lowly beings as cordwainers and frame-work knitters. Nevertheless these were the exceptions.

In order to pay a premium of £50 the annual income of the apprentice's father or guardian must certainly be in excess of that sum, or else he must be in possession of land or goods which could be mortgaged. The tables compiled by Gregory King in 1688 can give some idea of which sections of the community would have found it possible.

<u>Number of Families</u>	<u>Ranks, Degrees, Titles and qualifications</u>	<u>Heads per family</u>	<u>Yearly income per family</u>
12,000	Gentlemen	8	£280
5,000	Persons in greater offices and places	8	£240
5,000	Persons in lesser offices and places	6	£120
2,000	Eminent merchants and traders by sea	8	£400
8,000	Lesser merchants and traders by sea	6	£198
10,000	Persons in the law	7	£154
2,000	Eminent clergymen	6	£72
8,000	Lesser clergymen	5	£50
40,000	Freeholders of the better sort	7	£91
120,000	Freeholders of the lesser sort	5½	£55
150,000	Farmers	5	£42.10s.
15,000	Persons in the liberal arts and sciences	5	£60
50,000	Shopkeepers and tradesmen	4½	£45
5,000	Naval officers	4	£80
4,000	Military officers	4	£60

And by way of comparison it should be noted that there were:-

60,000.	Artisans and handicrafts	4	£38
---------	--------------------------	---	-----

Several points should be borne in mind, such as the term 'freeholders' included not only owners of their own farms but also copyholders and tenants for life. The phrase 'heads per family' meant the number of people living under one roof and included servants as well as children.²³ It should also be noted that the great rise in the economic and social status of the clergy did not take place until Hanoverial times. As Trevelyan has written, "In Jane Austen's novels the squires and parsons form one social group, but that was not the case in Tudor or Stuart times."²⁴ An analysis of the parentage of apothecarial apprentices in the first three years of the inland revenue records gives further details of the classes from which they were drawn.

<u>Vols. 41-42.</u>	<u>May 1710-June 1713</u>	<u>Vols. 1-2.</u>	<u>Oct 1711-May 1714</u>	<u>Totals</u>
<u>The Provinces</u>		<u>London and Westminster</u>		
Attorneys	---	2		2 @
Apothecaries	3	2		5 @
Baker	---	1		1 +
Beer or Ale Brewer	2	---		2 *
Blacksmith	1	---		1 *
Butcher	2	---		2 +
	(incl. 1 to an Apoth.& grocer)			
Citizen & Barber-Surgeon	---	2		2 @
Carpenter	1	---		1 *
Citizen & Carpenter	---	2		2 *
Chainmaker	---	1		1 *
Clerk (Clergy)	19	13		32 @
Clothworker	1	---		1 *
Coachmaker	---	1		1 *
Citizen & Cooper	---	1		1 *
Cordwainer	4	---		4 *
Citizen & Cutler	---	1 (to a 'chimist		1 *
Doctor in Physick	---	2 & apoth.)		2 @
Draper	---	1		1 +
Citizen & Drugster	---	1		1 @
Farrier	---	1		1 *

<u>Vols. 41-42</u>	<u>May 1710-June 1713</u>	<u>Vols. 1-2.</u>	<u>Oct 1711-May 1714</u>	<u>Totals</u>
<u>The Provinces</u>		<u>London and Westminster</u>		
Glasier	---	1		1 x
Glover	---	1		1 x
Girdler	---	1		1 x
Citizen & Girdler	---	1		1 x
Goldsmith	---	1		1 @
Citizen & Goldsmith	---	1		1 @
Grasier	---	1		1 @
Grocer	1	1		2 +
Citizen & Grocer	---	1		1 +
Citizen & Haberdasher	---	2		2 +
Herald painter	1	---		1 x
Innholder	3	1		4 +
Joiner	---	1		1 x
Leatherseller	---	1		1 +
Malster	3	2		5 @
{ Master } mariner	2	1		3 @
Mercer	2	1		3 +
Merchant	2	1		3 @
Citizen & Merchant-taylor	---	1		1 @
Pinmaker	1	---		1 x
Scrivener	---	1		1 @
Sergemaker	1	---		1 x
Shearmaker	1	---		1 x
Shipwright	1	---		1 x
Citizen & Stationer	---	1		1 @
Surgeon	1	4		5 @
Tanner	1	---		1 x
Tailor	---	1		1 x
Threadtwister	1	---		1 x
Victualler	---	1		1 +
Vintner	1	2		3 +
Wire-drawer	---	1		1 x
Woollen-draper	1	---		1 +
Alderman	2	---		2
Esquire	1	1		2
Gentleman ²⁵	26	17		43
Yeoman	10	2		12
Not Known	34 (Incl. 7 widows)	12		46

Symbols indicate @ = professional class
 x = craftsmen
 + = shopkeepers
 @ = merchants

Thus it is seen that out of a total of 224:-

52 comprise the professions (including 2 barber-surgeons which is doubtful)

31 comprise the craftsmen (Many of whom may have been well-to-do masters)

23 comprise the shopkeepers. (Some possibly should have been included in the craftsmen, e.g. Baker or confectioner)

13 comprise the merchant class.

It is extremely difficult to draw hard and fast lines between the different crafts, classes or professions; the citizen and haberdasher above may have been the owner of a small shop or he may have been a merchant of substance, or possibly only a journeyman, he may not have been a haberdasher at all but belonged to some other trade. The right of claiming the freedom of a company by reason of patrimony whether the applicant belonged to that craft or trade or not led to the members of any one company becoming ever more mixed. As Simpson wrote in 1911 in relation to the guilds of Chester, "To become a member of any one of these guilds or companies it was necessary to have first served an apprenticeship of at least seven years to a freeman of the city. In the majority of cases it is today by heritage in the male line. Therefore it is not surprising that the Barbers, the Sadlers, the Glovers, the Skinners and Feltmakers, the Tanners, the Grocers and Ironmongers, and the Weavers, they have not a single member whose occupation is that of the trades mentioned. It is the same elsewhere. The London Tailors' Company in 1710 had, out of a livery of 485, three hundred members who were not tailors."²⁶ The situation was even more exaggerated by 1822. The same picture can be seen in the London Grocers' Company. Their record of admissions for the last years of the seventeenth century show that amongst those who made their

apprentices free were a cloth-worker, a weaver, a currier, a dyer, a fruiterer, a vintner, a joiner, a merchant-tailor, an embroiderer, a girdler and two goldsmiths.²⁷

Nevertheless, if the above terms are taken at their face value with a degree of reserve, it becomes apparent that out of a total of 178 known trades, crafts and professions and positions of status, the parents of the apothecary apprentices comprising the professional (52)/merchant (13)/gentleman (45 including 2 esquires) class, made a total of 110. The remainder, the craftsman/shopkeeper class was 54, consisting of 31 of the former and 23 of the latter.

A small group of surgeon/apothecaries and doctors of physic and surgery all in the provinces, should also be considered.

<u>Surgeons and apothecaries</u>		<u>Doctors of physic & surgery</u>	<u>Total</u>
Clerk	1	---	1
Glasier	---	1	1
Merchant	1	---	1
Tallowchandler	1	---	1
Vintner	---	1	1
Gentleman	3	1	4
Yeoman	---	1	1
Not Known	9 (Incl. 5 widows)	1 widow	10

Owing to the great degree of elasticity with which the term 'gentleman' or for that matter 'yeoman' or 'merchant' was held, further illumination can be thrown on the problem only by a detailed examination of individual apothecaries, their background, relations, friends and position within the local community. Something has already been said about the London apothecary Francis Meynell and his relations in Derbyshire (see p.159) and a 'case-history' of his contemporary John Coniers (or Conyers) apothecary in Fleet Street will be made.²⁸

According to his own account written on 25 January 1677, " ... my Father 45 years since, Mr Edward Conyers or Coniers was espoused to Mrs Jane Clarke my mother" at St. Faith's church which now lay under the ruins of the cathedral of St. Paul's.²⁹ The next day he made a reference to his two brothers. "Meeting with my Brother Mr Emanuel Conyers the Confectioner, hee at night this very day above, mentioned that hee tould me my Brother Conyers at the Tower, the store-keeper, both of them was at Epping forest hunting of the haire ..."³⁰ As the parish registers were lost as a result of the fire of 1666 some difficulty was found in tracing further details, but a marriage allegation of 4 June 1667 resolved the problem.

"Edward Conyers of the Tower of London, citizen and Leatherseller, bachelor, about 30. Sarah Bateman of Whitechapel, Middlesex, spinster, about, 17.

With consent of Father, Matthew Bateman, Citizen and Leatherseller.

Alleged by Emanuel Conyers of All Hallows, Staining, Citizen and Grocer.

At St. Clement Danes', St. Mary's Savoy, or St. Paul's."³¹

Edward Conyers had been made free of the Leathersellers' Company by

Richard Coole on 10 May, 1667, whilst his brother Emanuel, "son of

Edward Conyers, late of Edmund Thorpe, County of Leicester, gentleman,

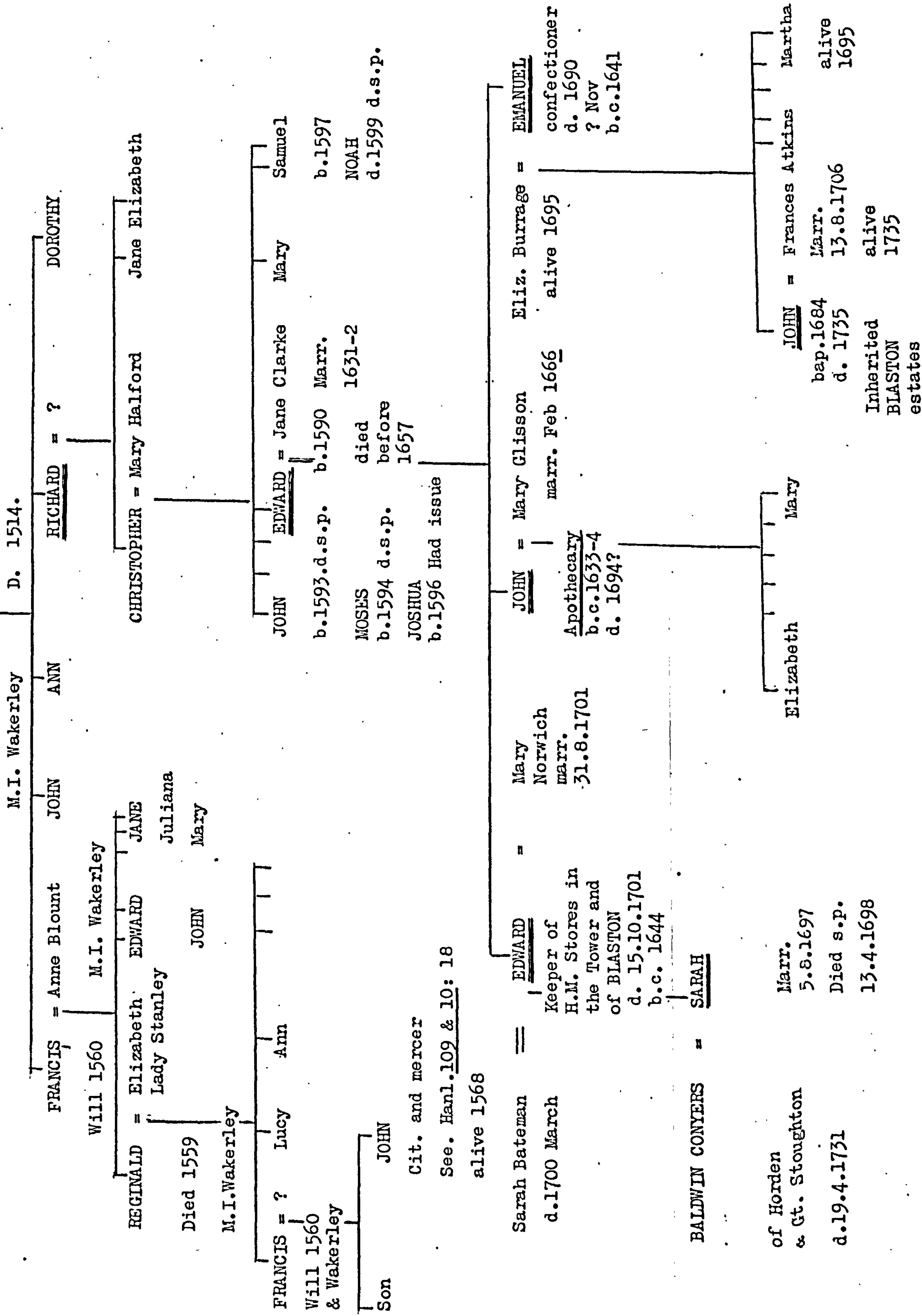
deceased, [was] ... apprenticed to John Finch of the Grocers' Company

for seven years" on 12 August 1657.³² Soon after Emanuel was bound,

John who had been apprenticed to Robert Phelps of the Apothecaries' Society gained his Freedom.³³

John Conyers appears to have first been in practice at the Unicorn at the corner of Shoe Lane, and then to have moved to the sign of the White Lion in Fleet Street. Several treatises on the treatment of the plague were produced during 1665, including one which was probably written by Conyers entitled, Direction for the prevention and cure of the plague, fitted for the poorer sort. The directions end with the note, "There are

REGINALD CONYERS of Wakerley, N'hants.



The earlier part of the pedigree is based on that in

Nichols op.cit., p.456. Later part amended to

accord with more recent research.

THE CONYERS OF WAKERLEY BLASTON and LONDON

two Cordial Sudorific Powders, proper against the Plague, the one for men, the other for women, at Mr Coniers' at the Unicorn in Fleet Street, with Directions for their use."³⁴

He married Mary the niece of Dr Francis Glisson, regius professor of physick at Cambridge (1636-1677).³⁵ There were at least eight daughters and two sons, few of whom survived infancy.³⁶

The Conyers were of north country origin where certain members such as the Conyers of Hornby Castle, Yorkshire became great land owners.

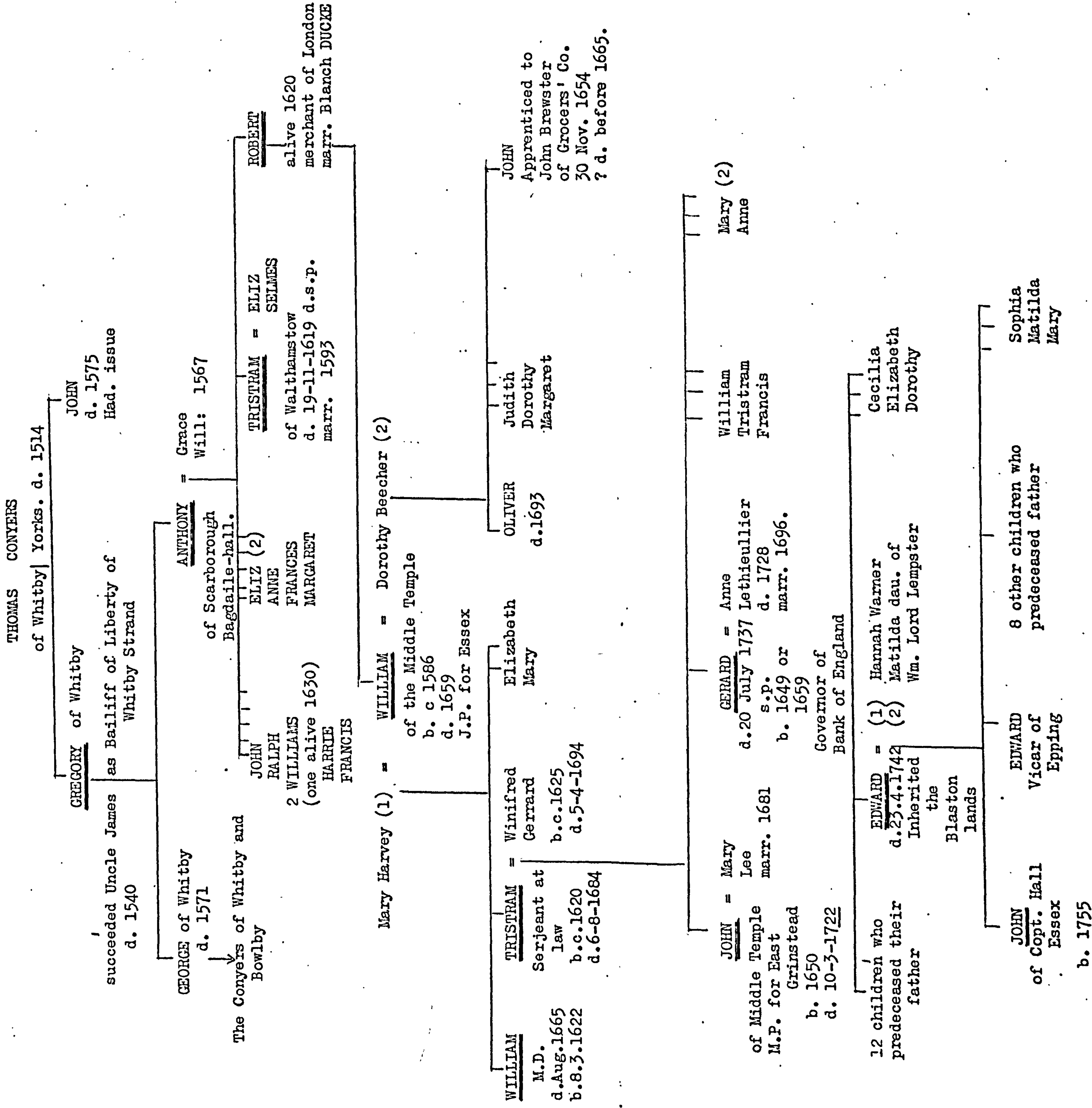
Reginald I, uncle to William the first Lord Conyers of Hornby migrated to Wakerley, Northamptonshire where he died in 1514.³⁷ He was said to have had three sons, Francis, John and Richard.³⁸ In the church in Wakerley there are monuments to Reginald and his wife Ann Blount, his son Francis's wife, and to his grandson Reginald (II) and his wife the Lady Elizabeth Stonor. In the next generation part of the family emigrated to London, where John Conyers, gentleman, was a citizen and mercer in 1568.³⁹ The main branch of the Wakerley Conyers seems to have died out in Northamptonshire but a junior one is claimed to have been continued by Reginald I's third son, the rather shadowey Richard, whose date of death or indeed his wife are unknown. Richard's only son Christopher married Mary Halford of Wistow, Leicestershire on 28 November 1589. They had a large family and from their names, Edward, John, Moses, Joshua, Samuel and Noah, would seem to have had strong non-conformist leanings, although their eldest son Edward, as noted by his son John the apothecary, was married in the church of St. Faith's. He married Jane Clarke, the daughter of William of Theckenham, Worcestershire.⁴⁰

John Conyer's brother, Edward, keeper of his majesty's stores in the Tower made money - possibly by means which do not bear too close an inspection - and some time in the 1680's bought the manors of Blaston and

Bradley in Leicestershire. Edward was intent on founding a family which could claim to be landed gentry, but unfortunately for his aspirations he had only the one child Sarah. Nothing daunted a marriage was arranged between Sarah Conyers and a certain Baldwin Conyers who does not seem to have been related.⁴¹ Tragically the centre of all Edward's hopes died in April 1698, only $8\frac{1}{2}$ months after marriage. Edward's wife was buried at Medborne, Leicestershire almost a year later on 29 March 1700; eighteen months afterwards he married a Madam Mary Norwich, sister of Sir Erasmus Norwich of Brampton, Northamptonshire, baronet.⁴² He did not enjoy his second marriage long but died on 15 October.

It has always been assumed, due to the inaccurate pedigree in Nichols, that the Blaston estates next passed to Edward's brother John, the apothecary of Fleet Street, and that John made a second marriage in 1706 in Leicestershire, to become the father of a second family, and died in 1735.⁴³ This is clearly erroneous if it is remembered that John was born about 1640. It is on the contrary thought that John died in 1694 and so predeceased his brother.⁴⁴ Certainly a John Conyers held the lands in 1720 for a person of that name of Blaston in the Gartree Hundred was a freeholder in the Leicestershire poll of that year.⁴⁵ This John was very probably the son of Emanuel the confectioner, the apothecary's younger brother.⁴⁶

Emanuel lived in the parish of All Hallows Staining, and there he and his wife Elizabeth, between the years 1667 and 1684, had at least seven children baptised, Elizabeth, Sarah, Edward, Martha, Emanuel, Samuel and John (28 March 1684).⁴⁷ Emanuel died in November 1690 and so he too died before his brother Edward. His son was John survived until at least 1695 because a John Conyers, Elizabeth Conyers, widow, and her daughter Martha, all of All Hallows Staining, are listed as amongst the inhabitants within the walls of London in 1695.⁴⁸



It would seem most likely that it was this John Conyers who married Frances Atkyns at Horninghold, Leicestershire, in 1706, when he would be 22 years old. But again there was a failure to produce a male heir.⁴⁹ Edward must have foreseen this possibility, and being determined to keep the Blaston lands tied to the name of Conyers in contrast to the Conyers blood through the female line, made arrangements whereby they passed to another Conyers family, the connection with whom was so distant as to be negligible, but a family of which Edward must have heard much.⁵⁰ Some of the Conyers of Walthamstow were immensely wealthy, Sir Gerard for example was a governor of the Levant Company and a director of the Bank of England.⁵¹ He died, aged 88(?), on 20 July 1737 without issue and left his great wealth to Edward, one of the numerous children but only surviving son of his older brother John, member of Parliament for East Grinstead and deputy lieutenant for Essex.⁵² Fortune would seem to have smiled on this Edward for not only did he receive Gerard's fortune but he was also the recipient of the lands of Blaston. He made his will in July 1741 and wrote, "The Leicestershire estate which was left to me and my son John in tail with remainders over by my cousin Edward Conyers of Blaston, Esq., Leicestershire, since deceased, in and by his last will and of which a recovery is now suffered and the same vested in me and my heirs. I direct my son John ... as soon as they conveniently can to sell and dispose and invest the money in the purchase of lands ... in Essex, and settle the same to uses ... as my said cousin ... devised the said lands ... in Leicestershire by his will."⁵³

John sold the Leicestershire estate consisting of nearly a thousand acres and eight messuages plus the tithes of five parishes in August 1750 to John Owsley Esq.⁵⁴

Thus was the Conyers family, one member of which at least had pretensions to grandeur, and others who moved on the fringe of those who had attained it. On the other side of Leicestershire in the large market town of Ashby de la Zouch there practised an apothecary, John Mynors, who frankly wrote for his own memorial on the mural monument in the north aisle of St Helen's church that he had " ... by a successful practice carried on many years here, enjoyed the pleasure of doing good, both to himself and those about him."⁵⁵ He died 26 June 1749, aged 73. He had several apprentices, amongst them Lewis, son of Thomas Dickenson of Stafford, deceased, for seven years from 1 September 1729.⁵⁶ Thomas had been a well established apothecary in the county town, who in 1712 had himself taken an apprentice from Ashby, a certain John Hassard though his apprentice of 1719 had come from even further away, being James, son of Charles Gibbons of London, gentleman.⁵⁷

The Dickensons origins lay with a substantial Staffordshire yeoman family. They can be traced back to the latter part of the sixteenth century to the village of Acton Trussell, which lies some four miles south of Stafford. The capital messuage and the manor together with other tenements were conveyed in 1575 to Mathew Moreton of Engleton, who in 1593 sold the messuage and tenements which were already in his tenure to Lewis Dickenson.⁵⁸ Lewis was living in the Moat House which stands on the site of the former house of the Trussells at the south end of the village. The fishing rights in the River Penk passed to Dickenson at the same time. The tax returns for 1666 show that Mrs. Dickenson was charged for six hearths, the largest assessment in the parish. The oldest part of the house probably dates back to the early sixteenth century and a brick west wing was added about 1700.

Three years after the 1593 transaction Lewis Dickenson of Acton, yeoman,

became a juror for Cuttlestone Hundred, a position he held until at least 1605.⁵⁹ In 1601, his son Lewis, aged 17, matriculated at St. Alban's Hall, Oxford. Some fifty years later, in 1650, another Lewis Dickenson, (apparently grandson of the first) Margaret his wife and their son Lewis, who was a minor, had the manor of Acton Trussell and Bednell together with other lands and the Moat House, settled on them; five years later the whole estate was settled on the young man on the occasion of his marriage to Jane Goldsmith. This union was to be the source of much future litigation, even unto the third and fourth generations.

On 10 February 1648, articles were signed between William Goldsmith, yeoman, and Lewis Dickenson that a marriage should be made between William's daughter Jane and Lewis's son Lewis; Goldsmith was to supply a marriage portion of £600, whilst Dickenson was to devise lands and tenements. Goldsmith did not consider that his partner had carried out his side of the bargain satisfactorily and so brought a law-suit 'about Easter 1649', as a result of which he was awarded £600 and £7 costs - or so he claimed. At the time of his death Goldsmith had not obtained satisfaction and further cases were instituted by his heirs in 1687, 1689 and 90, and 1712. Some of the problems arose because essential documents were conveniently or otherwise lost during the turmoil of the Civil War. The Goldsmiths never obtained what they considered to be their right and honest due. Even as late as the mid eighteenth century Lewis Dickenson the apothecary, who certainly seems to have been of a litigious frame of mind, took an interest in the will of William Goldsmith, yeoman, of Silkmore in the parish of Castle Church, made in January 1734.⁶⁰

The lands of Acton Trussell were settled on Lewis and Jane's eldest son, another Lewis, and his wife Elizabeth.⁶¹ This Lewis's two younger brothers, William and Samuel, went to seek their livelihood

as brasiers in the nearby town of Newport, Salop. Neither Lewis nor Elizabeth seem to have been long lived, certainly Lewis predeceased his father who lived to be eighty or so,⁶² but they had two sons, the inevitable Lewis, and Thomas. Thomas, like his uncles, went to a nearby town in order to set up in business.

Where he trained to be an apothecary is not known but he does not seem to have been sent to the metropolis like so many country boys. From his account books it is known that he was practising in Stafford by 1707. He married Elizabeth Rann, a widow, who gave him two sons, Lewis and Thomas, before she died in 1718.⁶³ Within three years the apothecary had followed his wife. The two orphans were placed under the guardianship of their Uncle Lewis, who in 1718 had married Mary, the daughter of Edward Ward of Stafford and sister of Thomas Ward a banker in Fleet Street, London. The two boys were brought up with their own three children, Edward, Mary and Lewis. The apothecary had granted the Star Inn in the Market Place to his elder son, Lewis, and to the younger, Thomas, £400 and his leasehold house in Stafford in which he was living at the time of his death, as well as land in the parish of Castle Church. In 1730 the orphaned Lewis was sent to Ashby for his apprenticeship, and Thomas to a school at Newport, possibly the grammar school, which had an excellent reputation, contrary to most at that time, from 1660 to 1740.⁶⁴ His schooling cost £2 a year and his board £12. John Dickenson, the son of Samuel the brasier, received from Thomas's Uncle Lewis £32 for schooling and board from January 1730 to midsummer 1732.⁶⁵

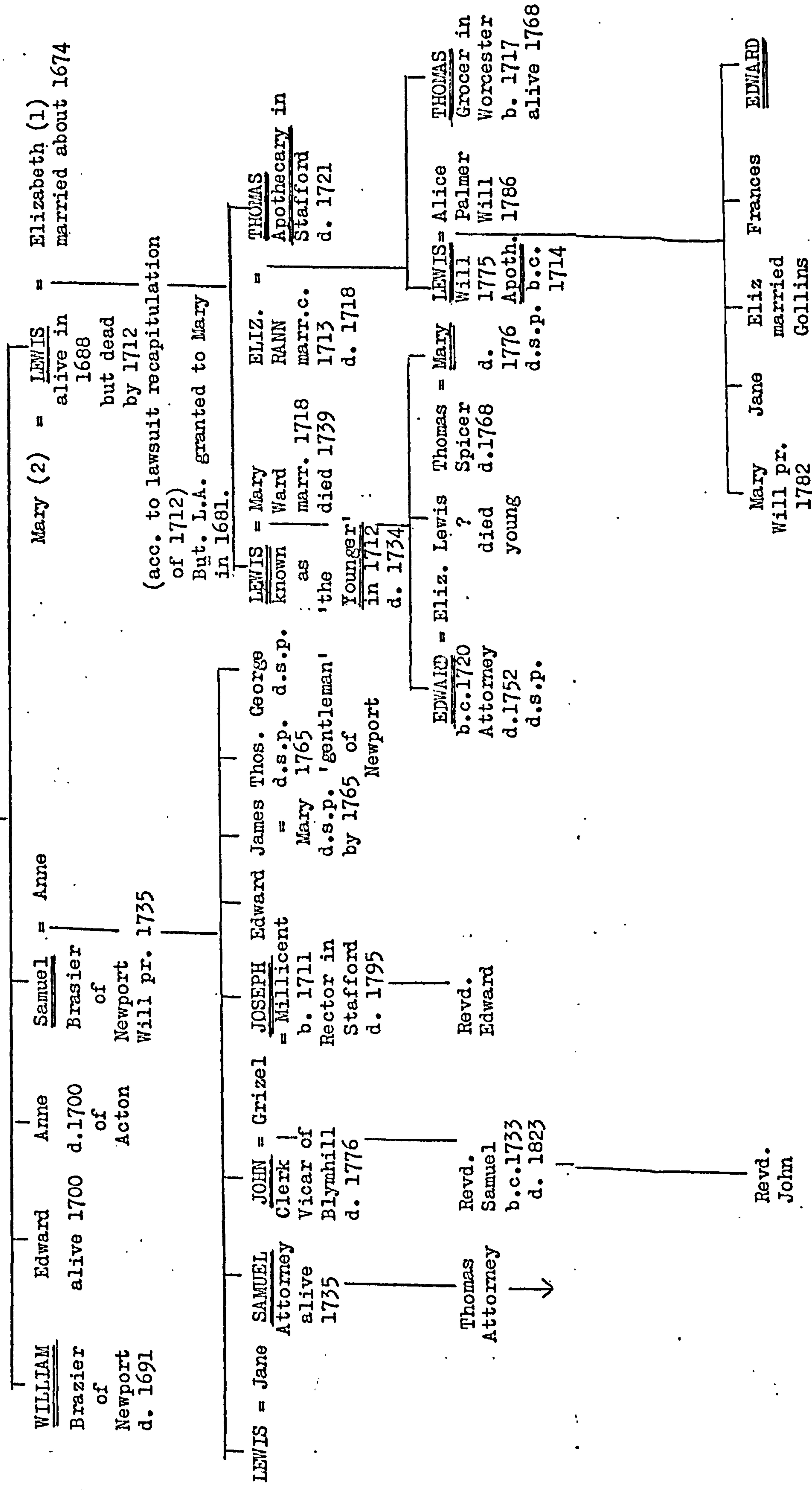
The Dickensons of Newport had done well and were to do even better. William, Samuel's brother, had died in 1691 and left his whole estate to his father Lewis of Acton, yeoman. It totalled £227.12s.6d in goods and chattells, including £160 of "Shop pewter and brass, old and new",

LEWIS DICKENSON of Acton Trussell in 1593.

alive in 1605

LEWIS = Margaret
17 in 1601

LEWIS = Jane Goldsmith
under 21 in 1650 married 1655 or earlier
alive in 1712 and called
'the older'



Compiled from Mss. at Wm. Salt Library,

V.C.H, Staffs. V, the wills of members of the
Dickenson family.

working tools and counter valued at £5 and three pigs also worth £5.⁶⁶

His brother Samuel married and had a large brood of boys, Lewis, Samuel, John, Joseph, Edward, James, Thomas and George, who were all alive when their mother made her will in 1740.⁶⁷

Little is known of Lewis except that he was married to a woman called Jane and that he inherited a fair amount of property from his father in 1735, including the house in which Lewis was living in the High Street together with stables and malthouse, and a messuage in Pave Lane in the parish of Church Aston.⁶⁸

The next son Samuel became a lawyer, later to be followed in his practice by his son Thomas. John entered the church and became vicar of Blymhill, a quarter of which manor he bought.⁶⁹

Joseph went to Cambridge and then followed his brother John's example.⁷⁰ Nothing is known of the four youngest brothers except that Thomas in his will (proved 1766) described himself as 'of Newport, gentleman' and he bequeathed everything to his brother James's widow.⁷¹

In Stafford the orphans' Uncle Lewis died in 1734, leaving his wife Mary with five children, all minors, to put out into the world. On 30 August 1735 Lewis presumably foregoing the last two years of his apprenticeship at Ashby, obtained letters of administration for both his mother's and father's estates.⁷² Thereafter young Lewes Dickenson seems to have taken over the running of the family in Stafford, and it is known from his account books that by 1736 he was practising as an apothecary in that town. As soon as schooling was finished his brother Thomas was apprenticed to the grocery trade. His apprenticemaster is unknown but it was probably a Mr Edwards, a grocer in the High Street in Worcester as he was certainly living there early in 1738 when he was the recipient of a very terse and admonitory letter from his brother. " ... you will receive about the same time two guineas sent by Martin the

carrier. Your demand of twelve guineas put me upon looking whether so much was due to you and upon enquiring found your letter of 21st February was in a very improper language. I will do everything I possibly can in my power to oblige and serve you but reckoning £5 per cent you are still outgone your allowance. I would have you take this into serious consideration for it is your own loss, and not lay out money as though you had twice the Income you have."⁷³

Thomas received many letters from friends and relations which kept him au fait with family news. Not long after Lewis's letter he heard from somebody who signed herself D. Byrch and described herself as a kinswoman. She related the interesting piece of gossip that his brother Lewis was about to embark on " ... marrying a daughter of Mr. Palmer's of Astons." The Palmers of Aston Hall just outside Stafford were an old country family and some may have thought that the daughter of the family was marrying 'beneath herself'. Subsequent history proves however that The Palmers' financial circumstances were far from sound, which might have been an affecting circumstance. Kinswoman Byrch continued "I would have you not marry till you are master of yourself." He came of age about Christmas 1738 and soon after set up for himself near the Hop Market in Worcester where he gained a reputation for being a good judge of hops. He married sometime in the summer of 1741 but this would seem to have been a less august match."⁷⁴

The young men's Aunt Mary Dickenson died in 1738 after a long illness. The year before her eldest son Edward had been articled to his cousin, Samuel Dickenson, the attorney of Newport. His articles stated that Samuel was to " ... instruct his clerk in the profession of law and practice of an attorney of the Court of Common Pleas at Westminster ... as a Solicitor in the Courts of Equity and in conveyancing ... and will take

his clerk to London in term time to learn the method of managing and transacting the business of attorney and solicitor, and at the end of the said five years at the request and cost of the said Edward Dickenson procure him to be admitted an attorney in the Court of Common Pleas."⁷⁵

In her will Mary Dickenson wrote that her son Edward had been amply provided for, consequently she divided her estate between her daughter Mary and her younger son Lewis. Her brother Thomas Ward of London, gentleman and Thomas Unett of Stafford, ironmonger, were made the executors. Lewis Dickenson was one of the witnesses.

It is doubtful if Edward practised in London after his articles were completed, but in any case he and his wife were living in the Goalgate, Stafford at the time of his death in the summer of 1752. His widow, Elizabeth, renounced her rights to the administration of her late husband's personal estate and letters were granted to Edward's sister Mary, now the wife of Thomas Spicer, citizen and haberdasher of London.⁷⁶ Spicer had the task of bringing order into the late Edward's affairs. In the year of his death he had been engaged in a case against his neighbour at Acton Trussell who, he alleged, had diverted a stream whereby the moat round his house had become stagnant, to the detriment of the fish he kept there.⁷⁷ During January 1753 Spicer paid to E. Antrobus £549.13s. which was the principal and interest of a mortgage taken out by Edward. He had also to manage the estate at Millmeece in the north of the county.⁷⁸ It all became a bit too much for Thomas Spicer who wrote to Lewis Dickenson in early 1763 that he was determined to bring "... my business into a narrower compass."⁷⁹ As a result, Lewis became more and more involved in the running of his cousins' affairs.

Edward's widow did not re-marry for a number of years and then she married Brooke Crutchley, a surgeon and apothecary in Stafford.⁸⁰

It is apparent from a furious letter written by Spicer on 21 May 1767 to Lewis that the new Mrs Crutchley had had the use of the house in Goalgate during her widowhood, and that when she had left it, would not make good the deficiencies in the inventory. Spicer now regretted that he had not charged her £6 a year for wear and tear over the last fifteen years which " ... Mr Samuel Dickenson thought very reasonable." Additionally he pointed out that he had had to pay " ... upwards of £3,000" much of it borrowed, in order to clear Edward's estate of all encumbrances. In spite of this outburst (or possibly Mrs Crutchley changed her attitude), Elizabeth and her new husband remained close friends of Mary Spicer's for the remainder of their lives.

The household goods of the late Edward Dickenson and now of Thomas Spicer were sold during June, Lewis paying Stephen Riley two guineas for selling and appraising them. It was a nine roomed house exclusive of laundry, brewhouse and cellars, and was well appointed, the home of people of some refinement. The goods included chocolate cups and saucers (6s.), a print of Ashbourne Hall (8d.), a Dutch card table (7s.6d.), twelve prints in frames (2s.), ten walnut framed chairs with leather bottoms (£3.15s.) an 8-day clock (not sold) pier glass and scounces (£3.3s.), but perhaps the most interesting purchases were those of a tea-chest for 6s. and a barometer for half a guinea by Dr. Withering.

Only the week before the sale Thomas Spicer, having felt the first intimations of serious illness, drew up his will.⁸¹ He directed that his stock in trade was to be sold to pay off two mortgages, one of £2,000 and another of £500 which he had obtained from Thomas Dickenson the younger of Newport, gentleman. His wife Mary was to have all his personal and real estate in Stafford, some of his household goods in his house in Fleet Street, London, and the use of his leasehold property in Reading for life. The residue of his estate together with his London freehold

house were devised to his brother the Reverend John Spicer. A year later on 17 June the will was proved by John Spicer, a will which was to lead to much acrimonious letter writing in the family in which Lewis Dickenson was involved to the hilt.⁸² John Spicer did some much needed arithmetic and came up with the figures of £8,294.0s.3d for his brother's assets and £8,460.2s.3d for his commitments, which of course left no residue for himself, and what was equally disturbing the house in Fleet Street was much in need of repair, apart from adjoining a poor and noisy area.

Much of the battle raged around the Reading property and eventually in the spring of 1769 Lewis travelled to London where to Samuel Dickenson's admiration he succeeded in effecting a settlement. Lewis Dickenson was no stranger to litigation or to dealing with the complicated processes of inheritance. He was for several years involved in the problems of his wife's family the Palmers. John Palmer of Aston Hall had died intestate in 1766 leaving a widow and two infant daughters. As there was some doubt as to Mrs. Palmer's probity the estate was put under the direction of the Court of Chancery, which appointed Lewis receiver and manager of the rents and estates.⁸³ He was also the executor of Richard Drakeford of Forebridge a member of another well known Staffordshire family. Again matters did not run smoothly and there was a law-suit.⁸⁴ In 1762-3 there was the case of Dickenson v. Clarke which concerned a trespass at Cotonfield and the allocation of 'strips', - presumably in the common fields. There is a suspicion that Lewis the apothecary was a lawyer manque.

In the midst of such activity he found the time to be active in local government affairs. He was mayor of Stafford from 1755 to 1759. Amongst his papers are lists of alehouse licences, constables' court papers and an account book of what are thought to be payments to electors in 1767-8. This busy life came to an end in July 1775 when he was just over sixty. His will, made seven years before his death, in which he styled himself

'gentleman' rather than 'apothecary', granted the remainder of his real and personal estates to his wife, his freehold lands at Stafford and Coton Chanford having already been settled on her and his children.⁸⁵

A month after Lewis' death his cousin, Mary Spicer, made her will at Furnival's Inn. The Reading estate passed to her husband's family as he had desired, the house at Stafford to Brooke Crutchley and his wife, there were numerous small bequests such as diamond ear-rings and lace lappetts to Miss Mary Dickenson " ... the daughter of Lewis Dickenson, late of Stafford, apothecary deceased", and the residue of her personal and real estate to " ... Edward Dickenson, son of the said Lewis ... "⁸⁶

So lived the Dickensons of Stafford; not a family that was involved in national affairs, nor one that made a noteworthy mark in the academic world, but one which it is reasonable to believe, was well known and respected in the West Midlands.

The life-style of the Botts of Coventry was not so very different, possibly they were a little more comfortably placed. Unlike the Dickensons, the Botts had some claims to being armigerous and had been, according to Kippis " ... seated in Staffordshire for several centuries."⁸⁷ Thomas Bott's charters were inspected by the commissioners for the sale of the honours and estates of Charles I in 1652, in which he claimed " ... houseboot, free common and fourteen hogs to be quit of pannage ... and estovers of timber and common, in right of several messuages and cottages in Dunstall, Argardsley and Barton and 222 acres appertaining thereunto."⁸⁸ He and his wife Ann were living at the old house of Dunstall-hall in the same year as the survey. The parish registers of Tatenhill show that they had a family of eight children, of whom at least six survived. The eldest, John, was only eleven or twelve when his father died in the year of the survey, and these were troubled times in England. Nevertheless his

inheritance was preserved intact although from the inventory of his house and home farm made soon after his death in 1686, he was by no means a rich man.⁸⁹ The appraisal amounted to £293.10s.8d, but did not necessarily cover the total of his worldly goods, he may well have possessed lands elsewhere; as he died intestate it is not known. He was survived by three daughters and administration was granted to his wife, Elizabeth and her brother Middlemore Statfold, gentleman. John had been a correspondent of Robert Plot of Oxford who referred to him as 'my worthy friend'.⁹⁰

John having inherited the family estate, the other sons had to move away in order to make their own way in the world. Septimus became an apothecary. Where he trained is unknown but it is possibly he who obtained his freedom of the London company by redemption on 15 June 1670.⁹¹ This Septimus Bott was on the yeomanry list of 1673, the probable year of his marriage to Joan Pigeon. It would seem to be very likely that Joan was the widow of Thomas Pidgeon, an alderman and apothecary of Coventry who had died in June 1664.⁹² Septimus died in 1702 aged 56 having outlived John by sixteen years, and unlike him left a detailed will.⁹³

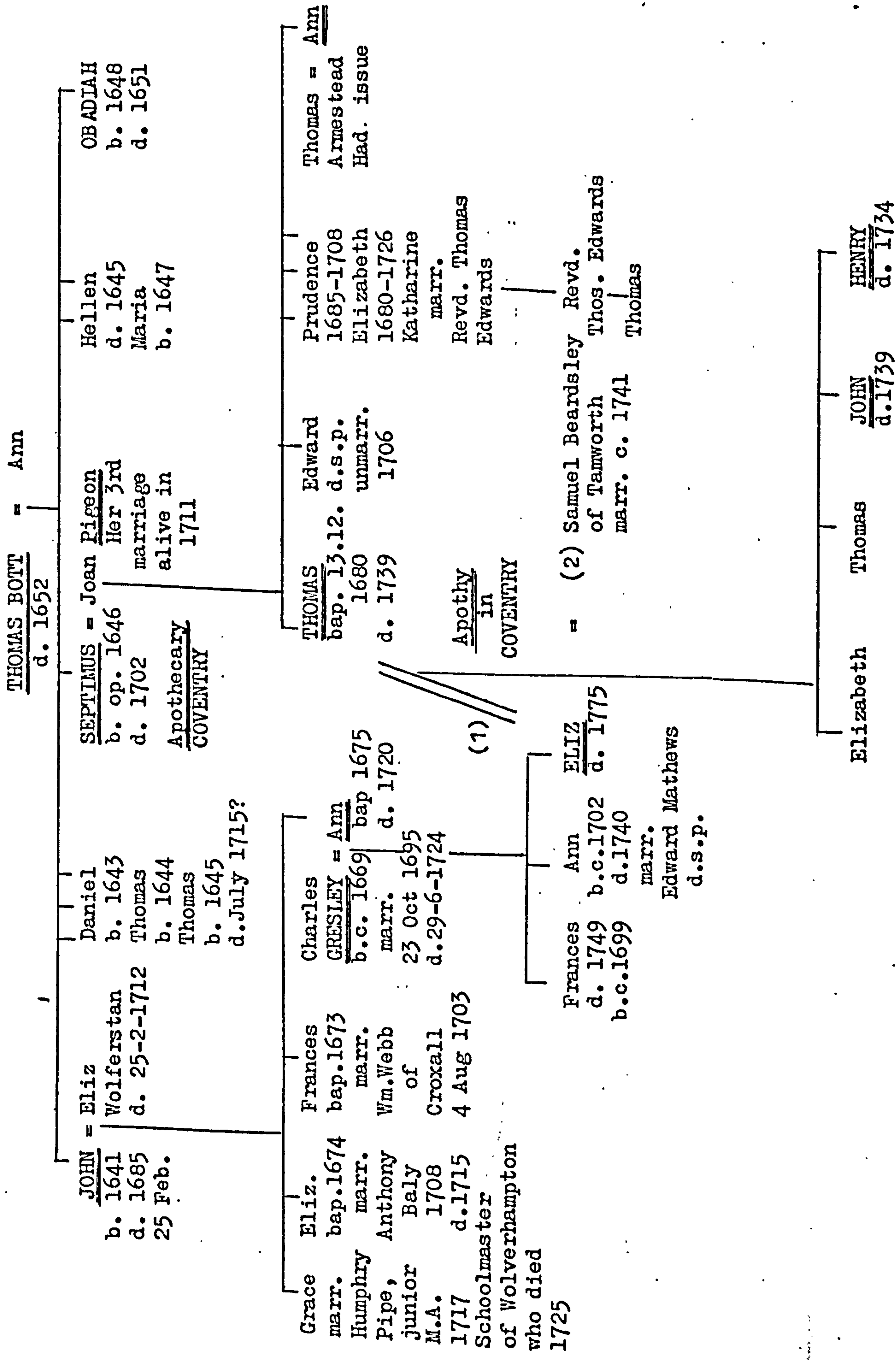
To his wife he bequeathed his messuages and lands in Young Fillongly, Warwickshire which he had purchased from a Mr Parkwood, and also the house in Cross Cheaping, Coventry where they were then living; after her death the first bequest was to pass to their elder son Edward and the second to their next son Thomas. He divided his land in Kent between his daughters Elizabeth and Prudence. Other lands in Fillongly, those which he had bought from a Mr Highway, were to pass to daughter Katharine after his wife's decease. The arrangements for his daughter Ann seemed to cause him the most concern. In June 1692 he had made a tripartite indenture between himself and Michael Armestead of Waddington, Warwickshire, clerk, and Thomas Armestead, gentleman, Michael's son, and Ann Bott his eldest

daughter, that is to say a marriage contract. Septimus and Michael had agreed that within two years of the wedding they would buy lands and tenements for the young couple to a value of £650, Septimus being responsible for £400 and Armestead for £250. The lands were to devolve upon the young people's children. The marriage had taken place but as yet the £650 had not been laid out, consequently Septimus now decided to leave his mesuage and lands in Old Fillongly to his daughter and son-in-law.

Obviously Septimus had done well in his thirty years or more in Coventry and his son Thomas carried on this flourishing business. Just about the time he was taking his second apprentice in 1719, Thomas married. His bride was Elizabeth Gresley, the daughter of his first cousin Ann, whose father was John Bott the inheritor of the family estate at Dunstall. When she was twenty Ann Bott had married Charles Gresley on 23 October 1695 in the parish church of Tatenhill. Charles was the third son of Thomas Gresley, the second baronet of Drakelow.⁹⁴

Like his father Thomas made his will some years before his death which was not a usual practice at the time.⁹⁵ He wished his eldest son, John, to " ... be bred to the Law if qualified for such imployment" and he was to be supported by the rents of his estate in Fillongly. The second son, Henry, was to be maintained by lands in Exhall. His wife was well provided for in the form of Thomas's personal estate and lands in the counties of Stafford and Warwick and the city of Coventry. Should both his sons die underage then the residue of the real estate was to pass to his cousin, John Bott of Burton-on-Trent, mercer, and his male heirs.⁹⁶ If cousin John had no male heirs then cousin Thomas Bott of Stratford-on-Avon and his male heirs were to inherit, " ... it being my desire that the said estate should continue in the name of Bott." His nephew Thomas Edwards, son of his sister Catherine the wife of the Reverent Thomas Edwards, vicar

THE BOTTS OF DUNSTALL and COVENTRY



All died young.

Compiled from F. Madan. Gresleys of Drakeley, (1898): Shaw's Staffordshire (1798)
parish registers of Tatenhill and Barton under Needwood, and the bishops' transcripts
for parish of Holy Trinity, Coventry at Lichfield Record Office, and the will of
Elizabeth Beardsley (née Bott)

of the parish of St. Michael's, Coventry, was to receive £100, and his wife was charged with having a " ... particular regard for nephew Edwards by gift or devise" in her will.

Thomas's son Henry was buried eight days after his father drew up his will, whilst son John was never put to the trial of his fitness to become a lawyer as his funeral on 24 April 1739 was only three months after the apothecary's. In January Mrs Bott was in receipt of a bill of four guineas for her husband's coffin and then in April had one of two guineas for her son's. She paid Robert Hughes for the funeral of Mr. Bott £50.1s.3d for hose, broad-clothes, black staves, dark crape and crape hatbands, and his funeral escutcheons, eight of silk and nine of glazed holland which cost £3.2s.6d Not perhaps an ostentatious funeral but certainly not a hole-in-the-corner affair. For the next two years Mrs. Bott seems to have been beset by demands for money, ranging from 9s. for twelve weeks poor rate to a solicitor's account for £21 for successfully resolving the difficulties of her late husband's deceased sister's estate, to the very serious matter of having to pay a Mr Love £236.13s10d in relation to the Warwick estate. Even the proving of Thomas's will was not inconsiderable. John Taylor had had to travel to London for the purpose and the cost of four days 'coming and going' and two days in London together with horse hire amounted to £3.5s6d.

Happily there was sufficient money for her to settle more frivolous accounts such as that of Prudence Reeds on the corner of Duke's Court, St. Martin's Lane London for the making of a tippet, and 23 yards of material from West & Gregg of Cheapside. Purchases from London were by no means rare and there are several bills from carriers for a box either to or from the capital.⁹⁷ In the eighteenth century London was the supreme arbiter of taste and there was a common reluctance to trust the local craftsman

or dealer if one could possibly afford the luxury of buying in London.⁹⁸ Elizabeth did not remain a widow for more than eighteen months but married Samuel Beardsley of Tamworth. She was nearly eighty when she died in 1775 having out-lived most of her generation.⁹⁹

This detailed examination of the two Botts, father and son, serves to place them firmly in a comfortable niche in the society of their day. It also provides an interesting commentary on early eighteenth century provincial life. On the one hand are county families such as the Gresleys, the land owners such as some of the Botts and the men of the church such as Dr Armestead, and on the other are the traders as for example the mercers of Burton and Tutbury, and the apothecaries with their busy shops selling groceries and drugs and yet with extensive medical practices. Their lives intermingled and they appear to have been on intimate terms with each other, a far cry from the social stratigraphy of Victorian England. Lewis Dickenson and the two Botts were men of position and influence in their towns. Their opinions and help were sought by many sections of society. They had a close and familiar, not to say, family relationship with the local gentry, with London merchants and bankers and with members of the well recognised professions of the Law and the Church. One is forced to the conclusion that a man who participated in retail trade in the early and mid-eighteenth century was by no means condemned to social ostracism. T.S. Willan has made the suggestion that "... it was the social snobbery of the Victorians that invented the tradesmen's entrance."¹⁰⁰

Social snobbery was not a Victorian invention but was one that they inherited and embellished. If one were to place a date for the origin of the denigration of retail trade one might hazard that of 1750. The three London medical organisations enacted three prophetic statutes in the middle years of the eighteenth century.

The Surgeons' Company's bye-laws of 1748.

One bye-law forbade the election to the Court of " ... anyone who practised as an apothecary or followed any other trade or occupation besides the profession or business of a surgeon."¹⁰¹

The College of Physicians statute of 1758

This stated that no one who had ever practised as an apothecary or kept open shop was eligible under any circumstances for election to the fellowship.¹⁰²

The Apothecaries' Company.

As Cameron has noted the Society of Apothecaries by 1774 felt it was time for its higher echelons to disassociate in some degree from retail trade by resolving that only those apothecaries practising medicine would be allowed on the livery.¹⁰³

Thus the snobbish feelings directed against retail trade grew and were nurtured until such ridiculous statements as the following could be made in 1811:- "Mr Cunningham's account of the different articles displayed very considerable powers of mind, as well as originality, and was conveyed in a language and manner peculiarly his own; and left us in admiration of acquirements so rarely met with in men of his rank and calling, who affected no other character than that of a respectable tradesman. ..."¹⁰⁴

Or in mid nineteenth century:-

"He lived to show how much of the coarser duties of this busy World may be undertaken by a man of quick sensibility without impairing the finer sense of the beautiful in nature and in art; ..."¹⁰⁵

The denigration of the apothecary and the delicate drawing away of skirts from anything which smacked of retail trade was in full swing by 1800. Richard Smith, junior, surgeon of the Bristol Infirmary 1796-1843 has written a valuable historical account of medical practice in Bristol and of the apothecary at the turn of the century he wrote:-

"About the year 1793 there were in Bristol 35 professed Apothecaries and 20 Surgeons, amongst the latter there were 8 or 10 who considered it to be infra.dig. to put "Apothecary" upon their doors, yet the greater part among these practised Physic and dispensed medicines. Amongst the Infirmary list Mr Godfrey Lowe and Mr Noble confined themselves to Surgery. But Mr Yeatman acted as an Apothecary and dispensed his medicines. ... Mr Allard although he held himself very high and was very indignant at the idea of being otherwise than "A Surgeon" - yet he not only practised Physic but was actually known by the name of 'Shop'. He however had his Bills for medicines made out in the name of his Apprentice and pretended that it was a perquisite of his 'young man' - but the fact was that every shilling ... went into his own pocket."¹⁰⁶

These curious ideas of the last two hundred years have been extrapolated backwards, and the belief has been, and is still by the majority, held that there was an almost absolute rupture between the professional physician and the trading apothecary through out their mutual histories. Whereever a community or a family is studied in detail this has not proved to be the case. Of the Bromfields of London it has been written, "It was then [the Victorian era] strongly held that in some mysterious way trade was denigrating. ... never could it be intermingled with the true professions of the church, medicine and the law. In this country it has never been denied that a family might start from humble origins but in the upward climb all such associations had to be ruthlessly discarded. Yet here is a family which remained in close and intimate terms with each other, who covered a wide spectrum of 'social' position, from an apothecarial shopkeeper, a druggist and tea-man to a barrister of Gray's Inn, an M.D. of Oxford and a surgeon to the royal household."¹⁰⁷

Dr Zuck in his researchs into John Mervin Nooth has found that his father Henry, apothecary of Sturminster Newton, Dorset, was the son of the Reverend Nooth, prebendary of Wells. Henry married Biddy the daughter of John Mervin, apothecary and probably Nooth's apprentice master, who had sent his son Edward to Balliol in 1728 where he obtained a B.A. In his turn Henry was able to send his son John Mervin to Edinburgh and then on the 'grand tour', and to purchase a commission for his other son Henry in a fashionable regiment.¹⁰⁸ This Henry then married into the landed gentry, his wife being the female survivor of the extinct baronetcy of Vavasour of Spaldington. A background and career which would have been assigned to a physician without question.

Rook and Newbold in their detailed study of the physicians, surgeons and apothecaries in Elizabethan and Stuart Cambridge have written "Our material shows the successful physicians and apothecaries moving in the same social circle and living in similar style and in similar houses. Their families often intermarried and they served as executors for each others wills. All the evidence suggests that with the possible exception of such men of international fame as Glisson, the physicians and apothecaries of Cambridge throughout much of our period were of equal status ... "¹⁰⁹ No wonder it is so common, and not at all surprising, to find such county families as the Herricks, and Dixies of Leicestershire or the Parkyns of Nottinghamshire apprenticing their sons to an apothecary.¹¹⁰

Notes and references.

1. B.Hamilton, 'The medical professions in the eighteenth century',
Econ. Hist. Rev. 1951, IV:141-169, see pp.141,158,159.
2. C.Wall, H.C.Cameron, E.A.Underwood, The history of the Worshipful Society of Apothecaries of London, Oxford, University Press, 1965, 1:4.
3. T.W.Peck & K.Wilkinson, William Withering of Birmingham, Bristol, J.Wright & Sons, 1950, pp.31,33.
4. P.Lewis, 'An Aldeburgh apothecary', Hist. of Med., 1971, 3:2:22-24
see p.23.
5. R.W.Ketton-Cremer, Norfolk and the Civil War, London, Faber, 1969,p.81.
6. W.J.Reader, Professional men. The rise of the professional classes in nineteenth century England, London, Weidenfeld & Nicholson, 1966, p.68.
7. 'Message to pharmacy', Pharm. Journ., 1977, 218:526.
8. C.Wilson, England's apprenticeship, 1603-1763, London, Longman, 1971 edn., preface, p.xiv.
9. A.Wagner, English ancestry, Oxford, University press, 1961, pp.46-8.
10. Ibid., pp.47, 58-9.
11. G.M.Trevelyan, English social history, London, The Reprint Society, 1948, pp.166-7.
12. Wagner, op.cit., p.64. His son was made first Earl of Suffolk.
13. Trevelyan, op.cit., p.165.
14. Wilson, op.cit., p.51.
15. Ibid., p.14.
16. Ibid., p.15.
17. Wagner, op.cit., pp.50-1.
18. J.K.Crellin, 'Sociology and the professions', (review), Pharm. Journ., 1977, 218:199.

19. The Inland Revenue apprenticeship records, I.R./1/1, ff.91,93.;
I.R./1/12, ff.197,101.
20. I.R./1/38, f.109.
21. C.H.Jenkinson (editor), Surrey apprenticeships, Surrey Record Society,
1929, volume X, passim. By 'mariner' was meant the captain of
a merchant ship, for example Thomas Wotton, captain of the
Desbovery who took on John, son of William Jordan of Surrey,
gentleman, for one East India voyage; the premium was £53.15s.
22. I.R./1/2, f.76. The T [o] urvilles were a well known Leicestershire
family. See J.B.Firth, Highways and byways of Leicestershire,
London, Macmillan, 1926, p.191.
23. Trevelyan, op.cit., pp.279,280.
24. Ibid., p.178.
25. An example of the lack of precision of the term can be seen in the
case of Charles Croughton. In the Inland Revenue apprenticeship
records when he was apprenticed to Ralph Sudlow in 1712 he was
stated to be the son of Charles Croughton, gentleman, but when
he gained the freedom of Chester on 1 March 1722 the record was,
"Charles Croughton of Chester, apothecary, son of Charles Croughto
of Chester, silkweaver". It was presumably his brother,
"Henry Croughton, wet glover, son of Charles Croughton,
silkweaver" who gained his freedom a year later. Whether it
was a second brother who was made free in 1726 under the entry,
"Robert Croughton, clerk, son of Charles Croughton of Chester
linendraper" is rather more doubtful. Some twenty five years
later a William Croughton, linendraper, deceased, had four sons
two of whom, Wainwright and Charles, were linendrapers (1747),
Thomas was a draper (1747) and the youngest Samuel, an
apothecary (1753). See J.H.E.Bennett, Rolls of the freemen

of the city of Chester, Part II, 1700-1805, Record society for the publication of original documents relating to Lancashire and Cheshire, 1908, 55:267, 270, 273, 331, 332, 342.

26. F.Simpson, Chester city gilds: the Barber-Surgeons' Company, Chester, G.R.Griffith, 1911, p.5.
27. Records of the Grocers' Company of London, admissions, Ms.11596/1.
28. Frequent references are made to both Meynell and Conyers in Robert Hooke's diary.
29. Sloane Mss., Ms.958, f.127. Conyers Memoranda.
30. Ibid., f.127v.
31. Allegations for licences issued by vicars-general of the Archbishop of Canterbury, 1660-79, Harl. Rec.Soc., 23:135.
32. Communication from C.Davenport, clerk to the Leathersellers' Company.; The Grocers' Company records, bindings, Ms.11593/1, f.262 (2), 12 August 1657.
33. Apothecaries' Society court minutes, Ms. 8200/2, f.42. Made free 25 February 1658; Ms. 8200/1, f.477r. Bound 2 August 1649, "John Conyers, son of Edward Conyers of Little Bowden in county of Northampton [sic] exam'd ... bound to Robert Phelps for 8 years from 29 September 1649". Presumably the father of the two apprentices had returned to Northamptonshire or Leicestershire after his marriage.
34. T.D.Whittet, The apothecaries in the Great Plague of London, 1665, Epsom, A.E.Morgan Publications p.17.
35. Francis Glisson was one of nine sons and four daughters, the children of William Glisson of Rampisham, Dorset and Mary Hancock, and the grandchildren of Walter Glisson of Bristol. See J.P. Rylands (editor) Visitation of Dorset, 1623,

Harl. Soc. Pub., 1885, XX:46. Two of Francis' brothers, Paul and John, were in the Church, the latter being rector of Marnhull, Dorset. Francis was a staunch Parliamentarian. He was a classical fellow of Caius, Cambridge and did not obtain his M.D. until 1634 when he was 37. He probably spent little time in Cambridge after 1640. He was president of the College of Physicians and a founder fellow of the Royal Society.; G.E. Cokayne & E.A.Fry (editor), Faculty Office marriage licences 1632-1714, British Record Society, 1905, 33:39, 9 February 1666. "John Coniers and Mary Glisson".

36. Guildhall library. St. Bride's parish registers, Ms. 6540/1,2.unpag.
37. J.Nichols, The history and antiquities of the county of Leicester, London, J.Nichols, 1798, 2:456.
38. Ibid., p.456. Reginald (I) was armigerous, his arms being engraved on his tomb but Nichols notes that the pedigree of Conyers of Wakerley and Blaston at the Heralds' Office only begins with this Richard, is without arms, and is not connected with Lord Conyers.
39. S.W.Rawlings (editor) Visitation of London 1568, Harl. Soc. Pub., 1963, 109-10:18. The pedigree in Nichols is very defective at this point with such clear impossibilities as Reginald (II) dying in 1559 (correct) and his eldest son Francis being born in 1567.
40. Jane Clarke's mother was a Widopp of Tooting, Surrey and a granddaughter of one of the clerks of the Greencloth, temp. Elizabeth. Arms, a label of five points on a canton or. See Nichols, op.cit., p.456, n.7.
41. Baldwin's father was John Conyers of Gray's Inn, son of Christopher of Horden, Durham and his first wife Elizabeth Langhorne of

Putney, the daughter of a merchant, whom he had married in September 1648. (In November 1666, Christopher now a baronet, married Julia Jermin, widow, the daughter of Richard, Viscount Lumley). Their son John married Mrs. Mary Newman of Great Stoughton, Huntingdonshire in November 1675 and so obtained the estate of Baldwins, Great Stoughton. See G.E.Cokayne & E.A.Fry; (editor), op.cit., 33:10,43, 26 September 1648, 3 November 1666. The date on the monument to Elizabeth Langhorne in St. Giles in the Fields is given in Nichols as 1644 but must have been an error. See Nichols, op.cit., p.457, epitaphs; Allegations for licences issued by vicars-general ..., op.cit., p.201, 9 November 1675.

42. Leicestershire Record Office. Blaston parish register. This register also covers the parishes of Medbourne and Haloughton (Hallaton)
43. Nichols notes that this pedigree was taken from a paper apparently written by Edward Conyers Esq., of Blaston, which was marked on the back, "Sir Thomas St. George, at the Herald's Office". See Nichols, op.cit., p.456. The earlier part of the pedigree may have been due to the late keeper at the Tower but the later part is more likely to be the work of another Edward who, as will be seen, had almost no knowledge of this branch of the Conyers family.
44. Neither the will of Edward nor John has been found but a John Conyers was buried at St. Bride's in 1694, and records of the Apothecaries' Society indicate that he was 'Not in Trade' in 1693.
45. British Library. 'Leicestershire Poll of 1720'. B.L.reference 10361.a.
46. The inaccurate Nichols pedigree shows Emanuel to have been born when his father was 92!

47. Guildhall Library. The parish register of All Hallows Staining, Ms. 17824, unpag. The burials of the first three children are recorded but how many others died is unknown as there is a complete gap in the burials register between 1677-88.
48. London inhabitant within the walls, 1695, London Record Society, 1966
2:70.
49. John made his will 3 April 1735 and died six weeks later, in which he devised" ... all & singular my messuages, cottages, closes ... whatsoever ... in my possession ... situate ... in Blaston ... or elsewhere" to his wife Frances and her heirs and assigns for ever, and also his personal estate. There is no reference to any children. See Leicestershire Record Office. Will of John Conyers, 1735.
50. These Conyers were living in Whitby, Yorkshire in the early fifteenth century. Three generations later, Christopher (died 1506) moved to Scarborough where he became a merchant and burgess, whilst his two brothers Thomas and James stayed in Whitby. The latter (died 1514) became in 1527 Bailiff of the Liberty of Whitby Strand. The two branches of the family remained in close contact. Two generations further on Anthony of Scarborough had a large family of eight sons and five daughters, and although they were prosperous living at Bagdaile-Hall, Tristram and Robert came south to try to find their fortunes in the capital, in which Tristram at least was eminently successful. He built a capital messuage in Hoe Street, Walthamstow in 1607, held lands and houses in Bishopsgate Street, London and more lands in Essex and Lincolnshire, as well as those he had inherited in Scarborough and Skipsey, Yorkshire. He married Elizabeth Selmes

but was childless; he bequeathed his Lincolnshire and East Ham estates to his great nephew Tristram and the remainder to William the son of his brother Robert. William was of the Middle Temple and became Serjeant-at-law, a position his son, another Tristram, also filled. William was also father of the William Conyers M.D. who died in the plague of 1665, and was also grandfather of the aforementioned Sir Gerard. See Nichols, *op.cit.*, p.457.; P.C.C. wills of Tristram (I), Prob.11 136 f.100, (1620), William (II) M.D., Prob.11 319, f.20, (1666), and Tristram(II), Prob. 11 377, f.111 (1684).

51. Gentlemen's Magazine, 7 April 1731, 1:171. Other evidence such as his marriage licence suggests that he was only 78.
52. Calendar State Papers (Domestic), 1703, pp.278,456.
53. P.C.C., Prob.11 718 f.146, 1742. Edward Conyers of Copt. Hall, Essex.
54. Nichols, *op.cit.*, pp.448-9.
55. J.Nichols. The history and antiquities of the county of Leicester, *op.cit.*, 1804, 3:623.
56. Inland Revenue apprenticeship records, I.R./1/12, f.1. The premium was £50.
57. I.R./1/1, f.[£]135, July 1712.; I.R.1/7, f.[£]40, October 1719.
58. Victoria county history, Staffordshire, Institute of Historical Research, 1959, 5:12-14.
59. Historical collections of Staffordshire, William Salt Archaeological Society, 1935, Volumes III, IV, V, *passim*.
60. The William Salt Library. The Hand-Morgan collection, Dickenson papers Ms. H.M. Dickenson, S.R.249/5.
61. These dates have been taken from the Victoria county history, Staffordshire but seem doubtful. If Lewis and Jane Goldsmith did not marry until 1655 then their son Lewis could only have been

nineteen at the most in 1675 and so a minor. It is possible that the marriage took place some years earlier; marriages are notoriously difficult to trace during the Interregnum.

62. Lichfield Record Office. Letters of administration were granted to a Mary Dickenson, the widow of Lewis of Acton in 1681, which suggests that Mary was a second wife. One difficulty in reconciling these dates is that in a re-capitulation of 1712 relating to earlier Goldsmith/Dickenson litigation, it is claimed that both Lewis and Mary were alive in 1688.
63. Ms. H.M. Dickenson 5 and 6. The churchwarden of St. Mary's, Stafford, John Higginson, signed a receipt for £1 on 15 September 1718, "For breaking up the ground in the chancel of St. Marie for your wife", which he had received from Thomas Dickenson.
64. A.T. Gaydon (editor) Victoria county history, Shropshire, Institute of Historical Research, 1973, 2:150-1.
65. Ms. H.M. Dickenson, S.R. 249/11.
66. This bequest some years later led to a court case because it was felt that William's nephew, Lewis, had not received his fair share but there seems to have been no rupture between the two families who always worked closely together and were good friends.
67. Lichfield Record Office. The will of Anne Dickenson, proved 1749.
68. Lichfield Record Office. The will of Samuel Dickenson, proved 1735.
69. John Dickenson was followed at Blymhill firstly by his son Samuel (who had been to St. John's, Cambridge, and had a degree in law) and then by his grandson John Horatio Dickenson. Samuel had a fine garden at Blymhill in which he grew many aromatic Mediterranean plants collected when he travelled as tutor to Charles Darwin (1758-78), the uncle of the famous Charles Darwin.

See J.Britten & G.S.Boulger, 'Jonathan Stokes and his Commentaries', Journ. of Botany, 1914, 52:317.

70. Joseph Dickenson became rector of St.Mary's, Stafford. On 12 September 1772 he married William Withering to Helena Cooke, daughter of the Town Clerk. Joseph's son Edward followed his father at Stafford.
71. Lichfield Record Office. The will of Thomas Dickenson, proved 1766.
72. Lichfield Record Office. Letters of administration granted to Lewis Dickenson 1735.
73. Lewis's fears for his brother's monetary sense seem to be partly borne out by two lottery tickets bought in 1741 at the 'lottery office of Thomas Cox, bookseller at the Lamb under the Royal Exchange' to be found amongst Thomas's papers. Nevertheless he seems to have been a stable member of the community as he was a churchwarden of St. Nicholas's from 1741 until at least 1744 when he had a poor rate of two shillings levied against him.
74. A letter from a Mr Norton of Penkridge said that he had been told of the match by Mr Withers, and that the bride was a relation of his wife's and Mr Egginton.
75. Samuel was to find meat, drink, washing and lodging and pay Edward £10.10s. at the end of his term; consideration money was £105. The witnesses were Thomas Unett and Lewis Dickenson. See Ms. H.M.Dickenson, S.R.249/6.
76. Public Record Office. Renunciations, Prob.31/349 (586-636), October 1752. Lewis Dickenson was a witness to the renunciation.
77. Victoria county history, Staffordshire, op.cit., p.14.
78. The Millmeece estate was not original Dickenson lands but probably came from Edward's maternal grandfather Edward Ward. It all caused considerable trouble.

79. As a step in this direction he let his house in Reading at £65 a year and " ... had got a man to take upon himself the business of the bleach ground on his own account".
80. She was still a widow in 1763 when Thomas Spicer sent her 'a pound of tea and a Box of Plumbs'.
81. P.C.C., Prob.11 940, f.257, June 1768. It was witnessed by an Edward Dickenson possibly Lewis's son. In a letter to Lewis in July 1765 Thomas Spicer had written, "P.S. Mr Edward Dickenson hopes to kiss your hand at the assizes".
82. Mary departed from the fray and spent most of her last years in Bath, living for long periods with Lady Stanley.
83. Ms. H.M.Dickenson, S.R.249/11.
84. Ms. H.M.Dickenson, S.R.249/12; Ms. H.M.Drakeford, S.R.249.
85. Lichfield Record Office. The will of Lewis Dickenson, 1775. It was witnessed by old Joseph Dickenson.
86. P.C.C., Prob.11 Bellas 517, December 1776. These presumably included the lands at Acton Trussell as she certainly still held them in June 1774 when she told the Staffordshire and Worcestershire Canal Navigation " ... to forbear from digging, building bridges etc. for the purposes of a canal on my estate at Acton."
87. A.Kippis (editor), Biographia Britannica, 1778, 2:426.; R.Plot, The natural history of Staffordshire, Oxford, The Theatre, 1686. The arms are engraved on the map attached.
88. S.Shaw, The history and antiquities of Staffordshire, Wakefield, E.P.Publishing Co., 1976, 1:111.
89. Lichfield Record Office. Inventory of John Bott, 1686.
90. Plot, op.cit., pp.23,261.

91. The Apothecaries' Society court minutes. Ms. 8200/2, f.136v.

There is some doubt as to whether the name of this man is Pott or Bott, on two occasions the name is clearly 'Pott' and on two others the 'P' has been altered to a 'B'. He had brought to the court of assistants a special order from the chamberlain.

The fine was £20.

92. In the church of Holy Trinity, Coventry is a handsome marble monument to Thomas Pigeon and his two wives, Elizabeth the daughter of John Foxley of Coventry, and Joan the daughter of Robert Greene of Great Glen, Leicestershire, and widow of Richard Foster.

Pigeon had four sons and one 'true' daughter Elizabeth who married John Dugdale eldest son of William Dugdale of Blithe Hall; it was she who caused the monument to be raised.

Septimus Bott made use of a book which has on the cover,

'Joane Pigeone her book, Feb. 26, 1671'. It was used as a receipt book for sums of money paid to Thomas Kirke in November 1672 and June 1673. By June 1674 the sum was being handed over by Septimus.

93. P.C.C., Prob.11 Degg 20, February 1703. At the time of his death he was an alderman of the city of Coventry and his memorial in Holy Trinity proclaims him to have been a supporter of the monarchy and the Church of England.

94. Charles Cresley and his older brother Thomas had been sent to London under the care of Sir John Moore and there bound apprentice. Neither of them stayed in the capital to become well established merchants. Thomas was to have been trained by John Broking and then go to Leghorn but in 1690 his mother settled her Nether Seal estate on him and he returned to the Midlands. Charles came

back a year or so later and after his marriage to Ann Bott lived at Dunstan-hall. See F. Madan, The Gresleys of Drakelow, Collections for a history of Staffordshire, Wm. Salt Arch. Socy. 1898, XIX: 95, 98-9.

95. P.C.C., Prob.11 Henchman 189, July 1739.
96. John Bott the mercer was in fact dead at the time Thomas made his will, having died in 1733 but he left five sons. He had made his wife, Abraham Swaine the vicar of Stapenhill, Thomas Bott of Coventry, gentleman, and Thomas Mathews of Tutbury, mercer, his executors. See P.C.C., Prob.11 Price 660, August 1733. Thomas Bott made his will on 2 November 1734 and as he had been named an executor of his cousin's will must have known of his death - which is curious. Several of the Botts of Stratford-on-Avon were apothecaries and surgeons. A Thomas Bott took an apprentice in 1719 and, possibly the same man, others in 1729 and 1753, whilst a John Bott became an apprentice-master in 1749 and 1755. See Inland Revenue apprenticeship records, I.R./1/46, f.£30, 1 July 1719; I.R./1/49, f.130; I.R./1/19, f.£80, 27 March 1753; I.R./1/18, f.£200, November 1749; I.R./1/20, f.143.
97. Derbyshire Record Office. Ms. D.77/Bott. There is a large collection of Mrs. Bott's bills.
98. M.D.George, London life in the eighteenth century, London, Kegan Paul & Co. 2nd edn., 1930, p.162.
99. P.C.C., Prob.11 Alexander 456, December 1775. Mary Spicer gave £20 to Stafford Infirmary but Elizabeth Beardsley was able to give £250.

100. T.S.Willan, An eighteenth century shopkeeper, Abraham Dent of

Kirkby Stephen, Manchester, University Press, 1970, p.146.

The snobbery relating to retail trade does not seem to have had much weight with the two young men of non-conformist background, Richard Pulteney and James Taylor when they were discussing the latter's future career. Taylor when he was at the Northampton Academy in 1749 wrote: "I have been very uneasy with regard to my future employment in life and cannot think of any profession because of the close application necessary in the pursuit; and as to a trade I am sure I could not support the confinement of a shop, nor bear to sit behind a counter from one weeks end to another". Seven weeks later he enlarged on the subject, "If you ask what employment I should chose myself ... of all the different mechanic business ... or employment which go under the denomination of trades I think I should prefer that of a 'Retail Draper', it seems such a neat cleanly business and what prejudices me in its favour is the good hours they keep, the leisure for reading and improving the mind, and the liberty which it affords to sanctify the Sabbath". In the end he decided to become a grazier, " ... it is genteel employment and affords much spare time ... I don't on any account intend to mingle farming with it which I am prodigiously aversed to." See The Pulteney correspondence, 3 March (1749?), 22 April 1749, 14 July 1749.

101. C.Wall, The history of the Surgeons' Company, 1745-1800, London, Hutchinson's Scientific & Technical publications, 1937, p.54.
102. Cameron, op.cit., p.189.
103. Ibid., p.188.

104. R.H.Cunnington, From antiquary to archaeologist, Princes Risborough, Shire Publications, 1975, p.92. William Cunnington was a very fine archaeologist of the latter part of the eighteenth century who was instrumental in liberating the new subject from the thraldom of the classics. He was ^adraper who later became a successful wool merchant.
105. Chronicles of Cannon Street, published privately by Messrs. Joseph Travers & Sons, n.d. ? 1957, p.20.
106. F.H.Rawlings, 'The decline of the apothecary in Bristol', a paper read at the British Society for the History of Pharmacy conference at Bristol, 1979. Extracted from the second volume of Richard Smith's 'Memoirs of the Infirmary'.
107. T.D.Whittet & J.G.L.Burnby, Plague, pills and surgery, the story of the Bromfields, Enfield, The Edmonton Hundred Historical Society, 1975, p.9.
108. D.Zuck, 'The provincial apothecary', (letter), Pharm.Hist., 1978, 8:2: unpag.
109. A.Rook & M.Newbold, 'Physicians, surgeons and apothecaries in Elizabethan and Stuart Cambridge', unpublished paper read before the British Society for the History of Pharmacy conference at Cambridge, 1974.
110. Inland Revenue apprenticeship records. I.R./1/54, f.103.
 Thomas Herrick was apprenticed to John Marshall of Mountsorrel for seven years from 24 July 1761. The Beaumanor estate which had been in the possession of the Earl of Essex was purchased in 1595 by Sir William Herrick, London goldsmith and financier and a member of an old Leicester family whose monuments may be seen in the Herrick chapel in St. Martin's church, Leicester.
 See J.B.Firth, The highways and byways of Leicestershire, London,

Macmillan, 1926, p.68.; I.R./1/49, f.98. Mathew son of Wolstan Dixie of Bosworth was apprenticed to Stephen Everard, apothecary of Ashby de la Zouch in 1728. Sir Wolstan Dixie, knight, purchased Bosworth Hall in the time of Elizabeth out of money left to him for that purpose by an uncle who was Lord Mayor of London. See Firth, op.cit., pp.418-9.; I.R./1/41, f.90. Francis son of Beaumont Parkyns of Sutton Bonnington was apprenticed to Lawrence Boarne of Nottingham, surgeon, in 1711. I.R./1/5, f.^x100, April 1717. Alexander son of Jane Parkyns of Sutton Bonnington was apprenticed to Alvery Dodsley surgeon of Nottingham. The Parkyns seat was at nearby Bunny where there are memorials to the family in the church. See C. Marsden, Nottinghamshire, London, R.Hale, The County Book series, 1959, pp.121-5.

CONCLUSION

W.J.Dempster in a challenging article on John Hunter has shown that, "Attitudes to Mr Hunter, like propaganda, become repetitive so that the calumnies, once started, continue and few in the surgical world have doubted or cared whether they had substance or not". Again and again men have written that he was 'failing in scholarship', 'did not bother to read books very much', was 'hampered by a defective education', or had 'a want of logical accuracy in his reasonings', all of which can be tracked back to his first (1794) detractor, Jesse Foot. Dempster shows these parrot-like judgements to be manifestly untrue and that Hunter was indeed a 'thinking man', that "If John is to be denied the title of scholar because of his contempt for Latin and Greek and the Oxbridge set-up in the eighteenth century, we must place Darwin also in the ranks of the non-scholar."¹ Thus a famous man's scholarship and powers of original thought have been almost irremediably traduced, and in like manner has a whole professional group been denigrated over the years. Only a detailed study of the lives of these people, the apothecaries of the seventeenth and eighteenth centuries redress the balance.

Trease has demonstrated that the lack of attention to English records has led to erroneous ideas about English pharmacy; he, for example, has shown that there was little or no time lag in the establishment of pharmacies in England or on the Continent during the Middle Ages.² Equally this negligence of later records has led to misconceptions. In an age which is conditioned to exact definitions and the legal protection of titles it is difficult for us^{to} project ourselves into a period when people were careless of such nice distinctions.

We have placed our own present day interpretation on a title and as a result have for long obscured pharmaceutical history. Several workers have begun to suspect that there was little difference if any between the so-called apothecary and the so-called surgeon of the late seventeenth and eighteenth centuries but proof was only forthcoming with the abstracting of all medical personnel from the Inland Revenue apprenticeship records, thus throwing a fresh light on the profession.

The apothecary in common with all vital institutions varied in his function and practice through the centuries, changing his role with the demands of society and science. It is inaccurate to regard him as a dispensing doctor, and equally so, to see him as a pharmacist with a busy counter practice making the occasional domiciliary visit or call on a physician's coffee-house. In the years centring on 1700 he was physician and surgeon and pharmacist and retail grocer. As the years went by it is not to be denied that he turned more and more to the practice of physic. Nor is it to be wondered at.

For in the year 1688 Gregory King made an informed estimate that the population of England and Wales was five and a half millions, whilst the survey of London as a result of the Act of 1694 has given a figure of nearly 124,000 for the 97 parishes within the walls and 13 outside,³ quite obviously the 114 members of the College of Physicians could not cope with numbers of that order. As Trail has so clearly pointed out the two English universities had inexplicably and regrettably failed in their duty, they were "... slow in adapting themselves to Continental methods of medical training which were attracting young men of good families. ... Although somewhat modified in 1570, the old Statutes on training for medicine at Cambridge remained much the same for nearly 200 years. Students were few; only 172 graduated in the 17th century,

a lamentably small number in view of the growing population."⁴

He was critical too of the College, writing, " ... it took the College authorities a long time to follow Harvey's advice and to admit that every physician must be at all times something of an empiric. ... They should [have], much earlier than they did ... copied the worthy example of the experimenting apothecaries, who took a much more practical view of the advances possible under the stimulus of the Royal Society."

The need and chances were there and the apothecary/surgeon, to employ the more accurate Scottish term, took them, in which he was actively encouraged by his local authorities in the form of the vestry who needed to implement the Poor Law Act by the best means available to them. The experience gained by this typically English medical practitioner was considerable long before the advent of the voluntary hospitals. He stood, not merely for one section of medicine but for a new mode of medical education and thought. His was a practical training for a practical subject which despite all jibes paid off handsomely with the advent of men of the stature of Jenner and Withering.

The long held views relative to the apothecary and surgeon's position in society without doubt require some very considerable adjustment. Unequivocally a man who possessed a medical degree was held to be a gentleman, one who had nothing to do with the lowly apprenticeship system, and yet when attention is paid to the records of the day this can be seen to be far from true. William Chambers of Hull, M.D. of Leyden (1724), Gilbert Heathcote of Derbyshire and London, M.D. of Padua (1688) and George Vaux of Reigate, M.D. of Leyden (1704) all took their apprentices.⁵ The last two men were Quakers which of

course debarred them from the English universities and will account for the fact George Vaux's brother Isaac, son George, nephew Isaac and grandson George all became members of either the old Barber-Surgeons' Company or the new Surgeons' Company. It is doubtful if their social standing was any less than their father's or brother's.

The popular estimate of the provincial apothecary also needs a re-assessment. He would seem not to have been the ignoramus so often believed. Willan has noted that Abraham Dent had much wider interests than those confined to a little market such as Kirkby Stephen and suggests that "... if more were known about the Abraham Dents eighteenth century England might appear less bucolic and less provincial."⁶ Study of the Botts and Dickensons certainly bears out this tentative conclusion. They were no strangers to London, and their contacts, both personally and for business, mostly through the widely spreading network of the immediate family and cousins unto the second and third degree, are to be found in the towns and cities of the Midlands and that Mecca of fashion, Bath. They travelled more widely than is often thought. Mary Spicer and her husband moved between Stafford, Reading and London, she was visited in Bath by her cousin Lewis and his wife and the old Rector, whilst Thomas Pigeon and Septimus Bott both had professional ties with the London Company of Apothecaries.⁷

The apothecary played an important civic role. Thomas Pigeon was mayor of Coventry and his son-in-law an alderman; Lewis Dickenson was mayor of Stafford and was involved in many of the town's activities; nor was this unusual. Several of the apothecaries of Chester were mayor of that city, the Joshua Bryans, junior and senior, were mayors of South Molton no less than five times between 1753 and 1810,⁸ and the famous William Franceys was mayor of Derby in 1697, 1699 and 1700,

to be followed by his son Henry. W.Derry of Bath has carried out some research into the mayors of that town and has come to the conclusion " ... that families influential in corporation affairs either originated with apothecaries or sooner or later produced apothecaries among their members."⁹ Thomas Ryves, 'pharmacopola' was Town Clerk of Hastings at the time of his death in 1691, in which position he was followed by Peter Fiott, 'doctor in phisick'.¹⁰

At the same time he was a man who was keenly interested in the sciences, in particular those which impinged on his own profession. They were in the forefront of the popular interest in natural history, the physic garden at Chelsea was of international fame and it is probably true to say that no man had a wider connection in the botanical world than James Petiver, F.R.S. John Houghton F.R.S. was sufficiently well thought of by the Royal Society to be invited to sit on their committee which had been set up to investigate the state of agriculture in this country.

It has been suggested that the apothecary's 'shop' was in fact a health-centre in miniature. R.S.Roberts has said, "The apothecary shop was a focal point of the medical scene of the day. [early seventeenth century] It was tending to become a medical centre with, often, a team consisting of a physician, a surgeon, an empiric and an old woman who acted as a midwife. They relied on the apothecary, his shop, and his dispensing skills to keep the team going."¹¹

If this were the case - and it is very likely - the reasons for the support that the apothecary received from the general populace are obvious, and equally obvious are some of the causes underlying the physician's jealousy. This focal point was no 'shop' in the sense of a modern help-yourself store or seedy down-at-the-heel corner shop

where dubious transactions took place at the back door. In any case such research as has been carried out on retail trade in the eighteenth century indicates that the denigration of the shop-keeper may well be a Victorian accretion to an idea which had begun to emerge some seventy years earlier. A view which has of recent years been enhanced by a modern belief that medical ethics and commerce, that is to say the 'profit-motive', are incompatible: the trader is a putative rogue, ipso facto, the apothecary was made of lesser clay than his medical colleagues.¹²

The time is more than ripe for a re-appraisal of the apothecary, his life-style, his background and status, and his function as tailored by the social demands of his period.

Notes and references.

1. W.J.Dempster, 'Hunter the scholar', World Medicine, 1975, pp.87-96.
2. F.N.L. Poynter (editor), The evolution of British pharmacy,
London, Pitman Medical Publishing Co., 1965,
presidential address by G.E.Trease, pp.11-16.
3. G.M.Trevelyan, English social history, London, The Reprint Society,
1948, pp.276,279.; London Inhabitants within
the walls, 1695, London, London record society,
1966, p:xx.; L.S. King, The medical world
of the eighteenth century, Chicago,
University Press, 1958, p.18.
4. R.R.Trail, 'Physicians and apothecaries in the seventeenth century',
Pharm. Journ., 1962, 188: 205-9, see p.206,207.
5. The Inland Revenue apprenticeship records, I.R./1/50, f.243,
Chambers who described himself as 'Surgeon etc.'
took as apprentice Ralph Darling who was heir
to the Oakes estate at Norton, Derbyshire
and was to become Chambers' son in law.;
In 1710 Joshua Fiddel of Leeds went as an
apprentice to Gilbert Heathcote in Chesterfield.
Information supplied by Dr.H.Ford.;
I.R./1/1, f.36, Richard Smith was apprenticed
to George Vaux, M.D. for seven years from
29 September 1711.
6. T.S.Willan, An eighteenth century shopkeeper, Abraham Dent of
Kirkby Stephen, Manchester, University Press,
1970, p.146.
7. Pigeon issued a token on which were the arms of the London company.

8. J.Cock, Records of ye antient borough of South Molton in ye county of Devon, South Molton, for the author, 1893, list of mayors.
9. W.Derry, 'Notes on the apothecaries of Bath', typescript deposited with the British society for the History of Pharmacy. p.1.
10. 'Hastings and district', Pharm. Journ., 1964, 194:651.
11. R.S.Roberts, 'Current problems' seventeenth century parallel', Pharm. Journ., 1969, 202:38.
12. The Parrys and S.W.F.Holloway see the Apothecaries' Act of 1815 as retrogressive because it placed the control of general practice under the jurisdiction of the Society of Apothecaries, a mercantile company, and thus degraded the general practitioner. See J.K. Crellin, 'Sociology and the professions', Pharm. Journ. 1977, 218:199.

ANALYSIS OF THE LONDON INLAND REVENUE VOLUMES

APPENDIX A

463

	Vols 1-5 1 Oct 1711 to Oct 1717	Vols 6-8 4 Nov 1717 to Sept 1721	Vols 17-18 14 June 1743 to 29 Dec 1749	Vol 19 April 1752 to July 1754	Vols 20-21 July 1754 to 11 April 1759	Vols 36-37 22 June 1793 to 9 March 1799
Apothecaries	323	249	270	79	156	65
Apothecaries etc	—	—	11	1	4	1
Apoths & Chemists	—	—	—	—	—	—
Apoths & Grocers	1	—	—	—	—	—
Barber-Surgeons	774 and wigmakers 3	and apothecary 1 374	59	—	1	—
Barber-Surgeons etc.	2	—	—	—	1	—
Barber-Surgeons & Wigmakers	and musician 1	and dentist 1	—	—	—	—
Barber-Surgeons	—	1	—	—	—	—
Waxmakers and Ropers & Stringers	—	—	—	—	—	—
Barber-Surgeons	—	—	—	—	—	—
Wax & Tallow (& Wig) makers	—	—	—	—	—	—
Chemists	and apothecary 2	—	and surgeon 1 3	—	3	and druggist 1 40
Chemists etc	—	1	2	—	1	23
Distillers	90	76	58	2	3	2
Doctors in Physic & Surgery	—	—	1	—	—	—
Doctors or Practitioners of Physick	—	—	—	—	—	2
Druggists	and grocer 1 1	and grocer 1 4	6	3	6	39
Druggists etc.*	Drug merchant 1	—	3	—	4	2
Members of Corporation of Surgeons	An M.D. 1	—	—	—	—	36
Physicians	—	3	—	—	—	—
Physicians etc	—	—	—	—	—	—
Surgeons	74	85	138 and anatomist 1 215	89	172.	and dentist 1 226
Surgeons etc	1	—	—	23	10	102
Surgeons and apothecaries	and bone-setters 2 8	13	3	—	1	—

ANALYSIS OF THE COUNTRY INLAND REVENUE VOLUMES

	Vols 41-44 May 1710 to 2 May 1717 and Merchant 1 270	Vols 45-46 7 May 1717 to 14 Feb 1720/1 and Merchant 1 179	Vol 50 24 Apr. 1741 to 14 Dec 1745	Vol 51 16 Oct 1750 to 2 Aug 1754	Vol 52 6 Aug 1754 to 7 Apr 1757	Vols 67-68 27 Oct 1793 to 15 June 1798
Apothecaries	—	—	196	122	89	35
Apothecaries etc	—	—	11	6	2	3
Apoths & Chemists	1	1	—	—	—	—
Apoths & Grocers	1	3	—	—	—	—
Barber-Surgeons	15 and whipmaker 1	113	20	12	3	2
Barber-Surgeons etc.	31	13	9	3	—	1
Barber-Surgeons & Wigmakers	23	—	—	—	—	—
Barber-Surgeons	—	—	—	—	—	—
Waxmakers	7	—	—	—	—	—
Ropers & Stringers	—	—	—	—	—	—
Barber-Surgeons	18	—	—	—	—	—
Wax & Tallow	—	—	—	—	—	—
& (Wig) makers	—	—	—	—	—	—
Chemists	—	1	—	1	—	and druggist 4 21
Chemists etc.	—	—	1	—	—	55
Distillers	10	5	12	6	3	4
Doctors in Physick	2	—	1	—	—	3
& Surgery	—	—	—	—	—	—
Doctors or Practitioners	and apothecary 1 8	and apothecary 1	—	—	—	1
of Physick	5	and apothecary 1 6	7	9	and apothecary 1 8	53
Druggists	—	—	2	2	—	32
Druggists etc*	—	—	—	—	—	—
Members of Corporation	—	—	—	—	—	—
of Surgeons	an M.D. 1	and Surgeon 1	—	—	—	—
Physicians	1	1	—	—	—	—
Physicians etc.	110	and pharmacist 1 103	—	and doctor 1 153	—	1
Surgeons	—	138	—	26	106	103
Surgeons etc.	17	16	2	—	12	226
Surgeons & Apothecaries	—	—	—	—	5	3

APPENDIX B

Note: +++ indicates town or parish NOT visited on this visitation.

--- indicates the town etc. was visited but no medical practitioner noted.

TRIENNIAL -ARCHIDIACONAL VISITATIONS OF THE LONDON DIOCESE

<u>Town or Village</u>	<u>Profession</u>	<u>1697</u>	<u>1700</u>	<u>1706</u>	<u>1715</u>
St. Albans	Medicus Courtsworth		+++	+++	John Coatsworth
	Surgeons Cook Field Stone				Richard Ruth Thos. Ramridge
Chipping Barnet	Surgeon Huddleston ¹		+++	+++	Jas. Ingram
Redbourne	Medicus	---	+++	+++	Gustavus Parkes
	Surgeon Cornelius Chapman				---
Barkway	Medicus	+++	+++	+++	John Dodson
Bishops Stortford	Surgeons	+++	+++	+++	Wm. Dymself ² Edwd. Wood Benj. Reynolds John Laurence
Ware	Medicus	+++	+++	+++	Ralph Grindale ³ Thos. Humphries ⁴
Saffron Walden	Surgeons	+++	+++	+++	Francis Sands John Starvy
Gt. Dunmow	Medicus Surgeon	+++	+++	+++	Benj. Chamberlain Simon Joslin
Good Easter	Surgeon	+++	+++	+++	No Name given
Gt. Easton	Surgeon	+++	+++	+++	No Name given
White Rooding	Surgeon	+++	+++	+++	No Name given
Thaxteed	Medicus and Surgeon	+++	+++	+++	Wm. Heckford
Braintree	Medicus Surgeons	+++	+++	+++	Benj. Allen ⁵ John Fermin John Layman

<u>Town or Village</u>	<u>Profession</u>	<u>1697</u>	<u>1700</u>	<u>1706</u>	<u>1715</u>
Castle Hedingham	Medicus	+++	+++	+++	John Clerk
Sible Hedingham	Medicus	+++	+++	+++	John Hills
Halstead	Medicus	+++	+++	+++	Samuel Fiske Cooke John Glading
	Medicus and Surgeon Surgeon				John Musgrave, Jnr. & Snr.
Wethersfield	Medicus Surgeon	+++	+++	+++	Jeffries White, Snr.
Colchester	Medicus Surgeons	+++	+++	---	Holmested ⁷ Rouse Seamans
				John Chote Benj. Cross Benj. Freeman Chas. Winslow Wm. Roate Wm. Seamans	
Lexden	Medicus	+++	+++	Fisher	Roles Jordan
	Medicus and Surgeon Surgeons			Joseph Burton	
				Noah Roual Richard Polley ⁶ Richard Pooley	Noah Roual Wm. Dammant ⁷
Coggeshall	Surgeon	+++	+++	Hast ⁸	Hast ⁸
Harwich	Medicus	+++	+++	Rodon ⁹	---
				Samuel Langley Sparks Philip Cornwallis Nowell	Samuel Langley Thos. Sparke Robt. Haselfoot
Kelvedon	Medicus Surgeon	+++	+++	John Harrison ---	--- Barzillac Sherman
Witham	Medicus Surgeon	+++	+++	Robt. Mayhew ¹⁰ Ralph Parkes	--- Robt. Mayhew(sic) Wm. Bartlett
Maldon	Medicus	+++	+++	Alexander --- --- ---	Wicks Sudley Malden Martin Henington

<u>Town or Village</u>	<u>Profession</u>	<u>1697</u>	<u>1700</u>	<u>1706</u>	<u>1715</u>
Maldon (contd)	Surgeons			Robt. Long Robt. Turner Robt. Kitchen John Wadd John Robjohn Wade	Johnson --- --- --- --- ---
Burnham	Surgeon	+++	+++	Nathaniel Hewson	Matthew Hewson Wm. Upshaw
Southminster	Medicus Surgeons	+++	+++	--- Claud Isnard (sic) John Greenwood Ralph Dorrington	Claud Iznard Isaac Harrison John Greenwood Ralph Dorrington
Leigh	Medicus	+++	+++	John Cook ¹¹	John Cook
Prittlewell	Medicus	+++	+++	+++	Staines
St. Osyth	Surgeon	+++	+++	Winslow	---
Rayleigh	Surgeons	+++	+++	Thos. Smith Richard Cox	---
Rochford	Medicus Surgeons	+++	+++	Willoughby Jas. Dervif Thos. Dines	--- John Young
Gt. Wakering	Surgeons	+++	+++	John Holster	John Coggin Samuel Hopwood Huddon
Chelmsford	Medicus	+++	+++	Jonathan Bowes ---	Jonah Bowes ¹² Aylmore ¹³
	Surgeons			Theophilus Aylmer Richard Strutt John Johnson Chas. Lamage John Offrell	Richard Strutt Johnson Madge
Springfield Richards	Medicus	+++	+++	Dr. John Shepcote	Lilly, Jnr.
Gt. Baddow	Surgeons	+++	+++	Pavitt Nath. Duffield	--- ---
Dedham	Surgeon	+++	+++	Henry Ewatt	---
Boreham	Surgeon	+++	+++	Jacob Trappett	---

<u>Town or Village</u>	<u>Profession</u>	<u>1697</u>	<u>1700</u>	<u>1706</u>	<u>1715</u>
Danbury	Surgeon	+++	+++	Thos. Clark	---
Fryarning	Surgeon	+++	+++	Edwd. Nicholls	---
Ingatestone	Surgeon	+++	+++	Michael Thorogood	---
Woodham Ferrers	Surgeon	+++	+++	Byat	---
Chipping Ongar	Surgeon	+++	+++	Edwd. Strut	---
Theydon Garnon	Surgeon	+++	+++	John Dymsey ¹⁴	---
Waltham Abbey	Surgeons	+++	+++	Thos. Allen Robt. Jerrard	---
Brentwood	Medicus Surgeon	+++	+++	George Barry Chas. Bernard	---
Barking	Surgeons	+++	+++	Robt. Bayley George Coggin	Robt. Bayley John Coggin Ralph Whistler
Acton	Surgeon	+++	+++		Daniel Nicholls
Chelsea	Surgeons	John Garrett John Tooley	+++ +++	+++ +++	Wm. Hepburn John Tudly
Hanwell c. Brentford	Surgeons	John Gravet John Drinkwater ¹⁵ Wm. Ansloe	+++ +++	+++ +++	Thos. Gilbert John Drinkwater ¹⁵ Wm. Ansloe Elijha Whitton
Isleworth	Surgeon	Thos. Ansell	+++	+++	Thos. Ansell
Kensington	Surgeons	Wm. Monday Ambrose Adams Barnabas Foster James Badge	+++	+++	Barker Adams
Twickenham	Surgeons	Thos. Jackson Mathias Perkins Edwd. Gisby	+++	+++	Thos. Jackson Mathias Perkin
Ealing	Surgeon	+++	+++	+++	John Gill
Enfield	Surgeons	Robt. Murrell Barnwell	+++	+++	Wm. Murrell
Edmonton	Surgeon	James Blows ¹⁶	+++	+++	John Spanie
Hackney	Surgeons	James Wall	+++	+++	Henry Morris Davies Jones

<u>Town or Village</u>	<u>Profession</u>	<u>1697</u>	<u>1700</u>	<u>1706</u>	<u>1715</u>
Whitechapel	Surgeons	John Lilly Henry Matthews Stephen Hall Joseph Atkinson Richard Franks	+++	+++	Henry Walter John Frost Vincent St. Nich Joseph Atkinson
Wapping	Surgeons	Snell John Chapliers Nath. Wickham Chas. Clarke Davis Mayling John Mogson	+++	+++	John Snell John Harris Wm. Boxworth John Herring William Davis Andrew Piries
South Mimms	Surgeon	+++	+++	+++	Ralph Dorrington
Staines	Medicus	Chas. Warwick Alex. Ross	+++	+++	---
	Surgeons	Jeremiah Coering Joseph Hayles			
Shadwell	Surgeons	Isaac Worth Wm. New Joseph Rideout Wheeler John Lancaster Miles Dan. French John Thornton Glanville Bowser Alex. Reccalemborg ¹⁷	+++	+++	William New John Atkins Daniel Delmast Martin Le Forte Thomas Tatnall Thos. Warner
Stepney, Poplar Spittlefields Limehouse	Surgeons	Archibald Clifford Wm. Smith John Gabar Jas. Conyers Matt. Allen Robt. Hubbard Sam. Ryley John Toeton John Starkey Humph. Berry John Haddey Peter Le Clark	+++	+++	John Crump Josia Mott John Cutler ¹⁸ Nath. Horsman Johnson Edwd. Lee
	Medicus and Surgeon	---			Thos. Walters
Tottenham	Surgeons	William Evans	+++	+++	Evans Hedges

<u>Town or Village</u>	<u>Profession</u>	<u>1697</u>	<u>1700</u>	<u>1706</u>	<u>1715</u>
St. Paul's Covent Garden	Surgeons	Dominico Moeren John Williams Paul Margatt Thos. Gregory Thos. Elton	+++	+++	---
St. Leonard's Shoreditch	Surgeons	+++	Richard Pope Chas. Crossley	+++	Richard Pope
St. James Clerkenwell	Doctors (sic)	+++	Jas. Newton Thos. Norman	+++	---
	Surgeons		John Pinsen Richard Pear		Henry Southen Richard Peare John Lapworth
St. Andrew's Holborn	Surgeons	+++	Wm. Pleahill Geo. Molines John Salter Wm. Bagnall Abra. Showell Edwd. Rolph Wm. Sadler John Chandler Thos. Ashby John Wilson Jas. Gregory Wm. Crawford	+++	John Kersey John Salter Wm. Sadler Geo Ralph Robt. Pemberton Marmaduke Norcliff Robt. Woodling Wm. Crawford
St. Martin's-in the-Fields	Surgeons	John Roberts Landes Thos. Diggons Jacques Wiseman Henry Amey Chas. Petter Rich. Wintle Jas. Crafford Stubbs Jas. Debott R. Benard Jas. Christie William Salmon ¹⁹ Thos. Roots Michael Fryteers Peter Roeleau Dan. Sneaton Lawrence Quinoe John Leroach Fran. Courterier Peter Greenhill Baker Richd. Cotton Alex. Smail Paul Buissier	+++	+++	---

<u>Town or Village</u>	<u>Profession</u>	<u>1697</u>	<u>1700</u>	<u>1706</u>	<u>1715</u>
St. Anns in the Fields	Surgeons	Minnicatt Henry Whitfield	+++	+++	---
Clement Danes	Surgeons	Chad. Goodyer Tateham Thos. Vernon John Johnson Wm. Cooper Abra. Carter Fran. Rolph			
Fulham	Surgeon	Robert Limpany	+++	+++	+++
St. Giles-in-the-Fields	Surgeons	Stamp Thos. Norman Geo. Medcalfe Hanwell Ambrose Cartwright Thos. Bennet John Ridley Geo. Dockwray Richd. Row Hugo Baxter Edwd. Barnard Michael Marcier	+++	+++	+++
Hampton	Surgeon	John Bunch	+++	+++	---
Hammersmith	Surgeons	Thos. Barnaby John Boaz Henry Terry	+++	+++	---
Hillingdon	Surgeons	Hezekiah Tymberlake Wm. Battey Wid. Battey	+++	+++	---
Uxbridge	Surgeons	Hezekiah Tymberlake Clement Fudge	+++	+++	---
St. James-in-the-Fields	Surgeons	Ferdinando Watkins Jas. Bra'Sol David Elder John Rouse Thos. Williams Wm. Luckers John Pain Wm. Turner Joseph Vallence	+++	+++	---
St. Mary le Savoy	Surgeons	Francis Farvin Nicholas Lawles	+++	+++	---

<u>Town or Village</u>	<u>Profession</u>	<u>1697</u>	<u>1700</u>	<u>1706</u>	<u>1715</u>
The City	Surgeons	+++	Richd. Harvey +++ Wm. Petty Sam. Brampton Sam. Stroud Thos. Neele John Kent John Bawber Geo. Smith Nath. Lloyd Jas. Wasse Thos. Parkins Josias Paule Wm. Bridgewater Thos. Blake Wm. Day David Allen Josias Atkinson John Chambers John Saxenbrough Joseph Bentum Henry Batchellor Dan. Turner Lionel Wafer Richd. Hardnett Thos. London John Fayram Douse Chas. Tomlinson Wm. Cole John Girle Richard Noble Wm. Coatsworth Richd. Blundell Richd. Lee Nath. Roberts Thos. Bridges Geoffrey Withers Isaac Rainbow Thos. Page Edwd. Sheffield Tucker Levi Ball Edwd. Boulter Nath. Barbgyr Jas. Wasse Gratian Bale John Wheeler Richd. Condrick Henry Middleton John Looker Wm. Oades John Gidley Jeremiah Wright		

<u>Town or Village</u>	<u>Profession</u>	<u>1697</u>	<u>1700</u>	<u>1706</u>	<u>1715</u>
The City (contd)	Surgeons (contd)	+++		+++	
			Anthony Herrendine		
			Wm. Naylor		
			Claud Gillart		
			Thos. Hotchkis		
			Dan. Brogden		
			Lewis Bushett		
			Wallis		
			Richd. Pigeon		
			Chas. Sheppard		
			Chas. Dakins		
			Thos. Greenhill		
			Geo Geekie		
			Peter Smith		
			Joseph Dudley		
			Chas. Kitchen		
			Godfrey Masters		
			Edwd. Green		
			Thos. Lyfe		
			Pepper		
			Mattw. Court		
			Jonathan Mounsey		
			Robt. Keylway		
			Wm. Brookes		
			Marmaduke Norcliffe		
			Owen		
			Edwd. Alder		
			Lyonel Peirce		
			Wm. Hensey		
			Jas. Morris		
			Henry Bull		
			Stephen Barbor		
			Chas. Bernard		
			Edwd. Page		
			Hugo Rider		
			Henry Boone		
			Thos. Hayes		
			Graves Overton		
			Christopher Nocholls		
			Henry Southen		
			Samuel Palmer		
	Doctor (sic)		John Case	21	
	Doctores and Chirurg.		Thomas Newman		
			Arthur Noy	21	
			Geo. Shuter		
			Christopher Frederick		
	Medicus		Dr. Salmon	19	

<u>Town or Village</u>	<u>Profession</u>	<u>1697</u>	<u>1700</u>	<u>1706</u>	<u>1715</u>
The City (contd)	Surgeons	+++		+++	Daniel Warren Richd. Harvey Wm. East Riceus Cook ²¹ Thos. Newman Sam. Fletcher Josia Paul Francis Dowse Street Arnold Richd. Babington Richd. Hardnet John Wheeler ²² Thos. Ferne Wm. Richardson Sam. Heywood John Shrowsbridge Henry Bradley Richd. Fowler Theoph. Ridoubt Henry Sneaton John Gidley Peter Smith Henry Hallaway Jonathan Mounsey Fredk. Vicarage Jas. Norton Wm. Dixon Christopher Nichols Stephen Draper Simon Snead William Barber
	Medicus				

Notes and references.

1. Possibly the Mr Huddleston of Enfield who received £2.10s.0d for
"Cureing a poor man". See Enfield vestry
minutes, 24 September 1682.
2. Member of the Dimsdale family of small-pox inoculation fame.
(See p.349).
3. The scribe wrote against the name, "Lic. ab Archb. Cantb."
Ralph Grindale described himself as a
'Dr. in Physick' when he apprenticed his son
Richard to Thomas Godman, a foreign brother
of the Barber-Surgeons' Company in June 1735
paying £100. See I.R./1/14, f.*26, July 1735.
Richard junior became surgeon to the London
Hospital and professor to the Company of
Surgeons in 1756. See, C.Wall, op.cit.,
pp.228-35.
4. "lic. Commissary Essex et Hertford."
5. "diplom. ab Univ. Oxon." This was the friend of John Ray.
6. The names were from two different parishes in Lexden.
7. Bloom and James classify John Holmestead of St. Mary's, Colchester
as a surgeon, as they also so classify
William Dammant of the same town. See
Bloom & James, op.cit., pp.52,46.
William Dammant together with Robert Seaman
and Benjamin Cross testified for Holmestead
when he applied for his licence. The
subscription book designates both Dammant
and Seamans as surgeons. See Ms. 9540/4,

unpag., op.cit., 10 July 1702.

8. The Inland Revenue apprenticeship records show a Philip Hast as
being a surgeon in Coggeshall in 1738 and 1747.
9. "Lic. London".
10. Robert Mayhew was described as a 'Dr. of Physic' in December 1716
when he apprenticed his son Robert to
Vesey Hadefoot, citizen and goldsmith for £70.
See I.R./1/5, f.^x35. December 1716.
11. A note was added to the effect that he was an apothecary " ... and
served his apprenticeship and practised as such
and not otherwise". It is noticeable that
in both 1706 and 1715 he was termed 'medicus'.
12. "dip. Acad. Lug. Bat."
13. "lic.". This must have been the Theophilus Ailmer (also Aylemore
and Aylmer) who subscribed on 14 November 1677 as
a practitioner of medicine and surgery
(Ms. 9540/1, f.61r.) and obtained a licence
for the practice of 'physic & chirurgery' on the
same day. See Bloom & James, op.cit., p.37.
Yet here in 1706 he is described as 'surgeon'.
14. Another member of the Dimsdale family. (See p.349)
15. Bloom & James do not classify John Drinkwater of Brentford as such
but he practised very probably as an apothecary
and surgeon; one signatory of his testimonial
was a surgeon and the other an apothecary,
John Rees. See, Bloom & James, op.cit., p.48.

16. The visitation of 1697 was very searching and the archdeacons made at least three separate demands to see the surgeons' or medical practitioners' licences. On none of these occasions was James Blow(s) able to produce one. He died early in 1707 and his inventory makes sorry reading. His total assets were £6.3s.0d plus debts both operate and desperate of £2. Amongst his goods were "seven sorry old chairs ... three old pillows ... a pair of sorry curtains and a rug ... a little copper cistern and a pewter one, very small, a few salves, pottles and pots, a few sorry old razors and some other tools ... the pole and surgeons' arms." See Commissary court records, Ms. 9174/3, 18 March 1707.
17. The name was subsequently altered to Erich Lemborg.
18. See page 138 -9.
19. This Dr. Salmon of St. Anne's, Blackfriars in 1700 may be the same man as the William Salmon of St. Martin's-in-the-Fields in 1697, and possibly the well known writer. It is noticeable how much these surgeons moved about. Henry Southen in 1700 was in the City (St. Sepulchre's) but had moved out to Clerkenwell by 1715, and Marmaduke Norcliffe moved from St. Dunstan's-in-the-West (1700) to Holborn (1715).

20. James Wasse, surgeon, appeared in two parishes, viz. St. Benet, Gracechurch Street, and St. Martin, Ironmonger Lane; whether it is the same man practising in two places, or two men, possibly father and son, is difficult to say. The same situation arises with Hezekiah Timberlake who is found at both Uxbridge and nearby Hillingdon.
21. Arthur Noy, John Case and George Shuter are not to be found in Bloom & James, but Thomas Newman is described in January 1700 as a surgeon. See, Bloom & James, op.cit., p.62. He may be the same Thomas Newman as was termed a surgeon in the same parish of St. Botolph extra Aldgate in 1715.
22. Thomas Ferne, surgeon, brought a certificate to state he was made a foreign brother of the Barber-Surgeons' Company on 5 March 1700, but he was admitted to the practice of medicine on 14 February 1709. See, Bloom & James, op.cit., p.48. The subscription book listed him as a surgeon. See Ms. 9540/4, unpag. 8 May 1702. He may be compared to Jonathan Cocke, chirurgeon of Colchester, who, three quarters of a century earlier, was licensed to practise medicine and surgery throughout the diocese. See Bloom & James, op.cit., p.25, 5 Sept. 1634.

MANUSCRIPTS

Bakewell, Derbys. The churchwarden.
Overseers of the poor accounts.

Bristol Archives Office
Bristol Apprentice Books.
Richard Kerwood, inventory, 1693.

British Library.
Sloane Mss. Ms. 958, Ms. 3321, Ms. 4063, Ms. 4064, Ms. 4067.
Wolley Mss. Ms. 6674.

Chester City Record Office
Records of bindings registered with the civic authorities, Ms. M/AP/B1, Ms. AB/4.

City of London Record Office.
Journals of the Acts of Common Council, Journal 12.

Cowper Museum, Olney.
Grindon Mss.

Derbyshire Record Office,
Gresley Mss., D.77/Bott.

Essex Record Office
Ms. 3505 (D/DHW F.141 B10)

Guildhall Library,
Apothecaries' Society records, court minutes Ms. 8200/1-8
Subscription book, Ms. 9540/4, Ms. 9540/1, Ms. 9539A/1, Ms. 9539/C,
Archidiaconal triennial visitations, Ms. 9537/24, Ms. 9537/26.
Commissary court wills, Ms. 9168/36, Ms. 9171/59
Barber-Surgeons' Company records, bindings, Ms. 5266.
Records of the Grocers' Company, admissions, Ms. 11596/1,
Parish registers of St. Mary Woolnoth cum St. Mary Woolchurch-haw.
The Woolmen's Company records. Court minutes, Ms. 6903.
Skilbeck Brothers business records, Ms. 10857.
St. Bride's parish registers, Ms. 6540/1,2.
The parish register of All Hallows Staining, Ms. 17824.

Guy's Hospital Medical School, Archive Office
Guy's Hospital register 'entry of physicians' and surgeons' dressers, 1778-1813.
Guy's and St. Thomas's Hospitals pupils and dressers, 1755-1823.

D.H. Holliday, 10, Russell Road, Enfield, Middlesex,
Enfield parochial charities accounts and minutes.

Leicestershire Record Office.
Blaston parish register.
Will of John Conyers, 1735.

Lichfield Record Office.
Thomas Needham, inventory, 1666.
John Bott, inventory, 1686.
William Bossley, inventory, 1714.
The will of Samuel Dickenson, proved 1735.
Letters of administration granted to Lewis Dickenson, 1735.
The will of Anne Dickenson, proved 1749.
John Denman, inventory, 1753.
James Condliff, inventory, 1753.
The will of Thomas Dickenson, proved 1766.
The will of Lewis Dickenson, proved 1775.

Linnean Society
The Pulteney Letters.

London Borough of Enfield Local History Dept.
Enfield vestry minutes.
Edmonton vestry minutes.

Middlesex record office,
Ms. D.R.O. 4/1/2.
Edmonton parish register.

Public Record Office.
Wills of Prerogative Court of Canterbury, Prob. 11.
Inland Revenue apprenticeship records, I.R./1/1-72.
Duchy of Lancaster records survey of the manor of Enfield, 1686, Ms. D.L.43/7/9.
Chancery Masters' exhibits Ms. C.104/130-1.
State papers (domestic), Ms. 29/17.
Inventories, Prob. 3.
Renunciations, Prob. 31.

Records of the Grocers' Company of London.
admissions, Ms. 11596/1.
bindings, Ms. 11593/1.

Royal College of Surgeons Library,
Examination book of the Company of Surgeons.

William Salt Library, Stafford.
Hand-Morgan collection, H.M. 27/3 & 4., 27/5.,
Ms. H.M. Dickenson, S.R.249/5.

The Sturton letters, copies in the writer's possession.

TYPESCRIPTS

W.Derry, 'Notes on the apothecaries of Bath', typescript deposited with the British Society for the History of Pharmacy. p.1.

The Friends' Library, Euston Road, London, Friends biographies, typescripts.

F.H.Rawlings, 'The decline of the apothecary in Bristol', unpublished paper read at the British Society for the History of Pharmacy Conference at Bristol, 1979.

A.Rook and M.Newbold, 'Physicians, surgeons and apothecaries in Elizabethan and Stuart Cambridge', unpublished paper read before the British Society for the History of Pharmacy conference at Cambridge in 1974.

A.A.Tulley, 'Chemical studies of W.T.Brande, 1788-1866', unpublished M.Sc. thesis, University College, London, 1970-71, Senate House Library.

NEWSPAPERS

The Bath Journal 1744

The Cumberland Pacquet 1779

Creswell and Burbage's Nottingham Journal 1786

The Hull Packet 1800

Northampton Mercury or the Monday's Post 1721

Sheffield Iris 1830

Leicester Herald 1792, 1808.

Enfield Observer, 1874, 1875, 1880, 1926.

PRINTED SOURCES

A.Adlung & G.Urdang, Praktiker, Politiker und Historiker der Pharmazie, Berlin, Julius Springer, 1935.

Advertisement of Thomas Hammond. In British Library, ref. 546.d.44 (11).

Allegations for licences issued by vicars-general of the Archbishop of Canterbury, 1660-79, Harl. Rec. Soc., 23.

A.B.Allen, Eighteenth century England; the complete background book, London, Rockliffe, 1955.

W.Andrews, Bygone Middlesex, London, The Hull Press, 1899.

W.Ashwell & E.Szlichcinska, John Ray, naturalist (1627-1705), Braintree and Bocking civic society, 1977.

D.Avery, Charity begins at home, Edmonton workhouse committee, 1732-37, Enfield, Edmonton Hundred Historical Society, 1967.

W.Baildon, 'Notes on the religious and secular houses of Yorkshire', Yorks. Arch. Soc. Records, 1895, 17.

G.Baker, An enquiry into the merits of a method of inoculating the small pox, 1766.

J.Baron, The life of Edward Jenner, M.D., London, H.Colburn, 1838.

C.R.B.Barrett, The History of the Society of Apothecaries of London, London, Eliot Stock, 1905.

The Bath and Bristol Magazine, 3: 422.

J.H.Bell & T.Redwood, Historical sketch of the progress of pharmacy in Britain, London, The Pharmaceutical Society of Great Britain, 1880.

J.H.E.Bennett (editor) The rolls of the Freemen of Chester, part II, 1700-1805, Lancashire and Cheshire Record Society, 1908, 55.

J.D.Bernal, Science in history, Harmondsworth, Penguin Books, 1969.

W.J.Bishop, 'The evolution of the general practitioner in England', The Practitioner, 1952, 168: 171-9.

J.H.Bloom & R.R.James, Medical practitioners in the diocese of London licensed under the Act of 3 Henry VIII, c.ii.; an annotated list, 1529-1725, Cambridge, University Press, 1935.

W.Boorman, 'Smallpox in eighteenth century Winchester', (letter), Local population studies, 1968, 1.

W.C.Borlase, The descent, name and arms of Borlase of Borlase, in the county of Cornwall, London, G.Bell & Sons, 1888.

G.S.Boulger, 'Samuel Dale', Jnl. of Botany, 1883, 21: 193-7, 225-331.

G.S.Boulger & J.Britten, 'Joseph Andrews', Jnl. of Botany, 1918, 56: 257-8.

G.S.Boulger & E.Hawkes, Pioneers of plant study, London, Sheldon Press, 1928.

J.Brand, The history and antiquities of the town and county of the town of Newcastle upon Tyne, London, 1789.

W.Braylesford Bunting, Chapel-en-le-Frith: its history and its people, Manchester, Sherratt & Hughes, 1940.

W.R.Brett, 'Parmentier', Chem. & Drugg., 1951, 155: 830-1. X

N.G.Brett-James, The life of Peter Collinson, London, published for the author by Edgar G. Dunstan, n.d.

J.Britten (J.E.Dandy editor), The Sloane herbarium, London, Trustees of the British Museum, 1958.

J.Britten & G.S.Boulger, 'Jonathani Stokes and his commentaries', Jnl. of Botany, 1914, 52: 299-306, : 317-327.

W.Bromfield, Thoughts arising from experience concerning ... the small-pox, 1767.

J.Burnby, 'Three 17th.century London apothecaries', Pharm. Hist., 1975, 5: 1: 2-3.

'Apprenticeship Records', Trans. Brit. Soc. for Hist. Pharm., 1977, 1:4: 145-75.

J.G.L.Burnby & A.E.Robinson, And they blew exceeding Fine, Robert Uvedale 1642-1722, Enfield, Edmonton Hundred Historical Society, 1976.

Calender State Papers (Domestic), 1703.

R.Campbell, The London tradesman, London, T.Gardner, 1747, David & Charles reprint 1969.

E.H.Carter, The Norwich subscription books, London, Thomas Nelson, 1937.

J.H.Cassedy, "Medicine and the rise of statistics", in A.G.Debus (editor) Medicine in seventeenth century England, London, University of California, 1974.

B.Chandler, An essay towards an investigation ... of inoculation, 1767.

J.Chandler, A discourse concerning the small-pox, occasioned by Dr. Holland's essay, 1761.

D.Chapman-Huston & E.C.Cripps, Through a city archway, London, Murray, 1954.

Chem. & Drugg., 1870, 11: 142 'Our portrait gallery: Thomas N.R.Morson'.

1913, 83: 143-9 'London wholesalers in 1863 and now'.

1926, 105: 198-9 'Attempted legislation in 1748'.

1926, 105: 90-100 'The title of chemist and druggist'.

1937, 126: 747 'Materia medica collections in Oxford'.

1947, 148: 693 'Father to son for five generations'.

1954, 161: 666 'Honoured weapons of science: Museum of History of Science, Oxford'.

.. 1959, 172: 125-7, 'Bridport Town's coffee tavern'.

Chronicles of Cannon Street, published privately by Messrs. Joseph Travers & Sons, n.d. ? 1957.

G.Clark, A history of the Royal College of Physicians of London, Oxford, Clarendon Press, 1964.

G.N.Clarke, 'Aspects of science in the age of Newton', Econ. Hist., 1937, 3: 362-79. 7

L.A.Clarkson, The pre-industrial economy in England, 1500-1750, London, Batsford, 1971.

A.M.Coats, The book of flowers, four centuries of flower illustration, London, Phaidon, 1973.

J.Cock, Records of ye antient borough of South Molton in ye county of Devon, South Molton, for the author, 1893.

G.E.Cokayne & E.A.Fry (editors), Faculty Office marriage licences 1632-1714, British Record Society, 1905, 33.

P.Cooper, 'Some Bristol contributors to science, medicine and technology', Pts. I & II, M. & B. Pharmaceutical Bulletin, 1957, 6: 8: 90, 120.

Z.Cope, 'The origin of the general practitioner', History of medicine, London, History of Medicine Ltd., 1973, 5: 1: 3-9.

Counterscope, Professional Projects Ltd. (Bayers), 1962, 1: 18: 1, 'A Faversham Pharmacy'.

J.Covey, 'Further observations & facts relative to ... inoculation ...', The Ldn. Med. Jnl., 1787.

D.G.Crawford, History of the Indian Medical service, 1600-1913, London, W.Thacker, 1914.

J.K.Crellin, 'A note on Dr. James's Fever powder', Trans. Brit. Soc. Hist. of Pharm., 1974, 1: 3: 136 - 43.

'Leicester and 19th century provincial pharmacy', Pharm. Journl., 1965, 195: 417-8.

'Sociology and the professions', (review), Pharm. Journ., 1977, 218: 199.

E.C.Cripps, Plough Court: the story of a notable pharmacy, London, Allen & Hanbury, 1927.

'Pharmacy in the 18th and early years of the 19th century', Pharm. Journ., 1950, 164: 29-33.

R.H.Cunnington, From antiquary to archaeologist, Princes Risborough, Shire Publications Publications, 1975.

W.H.Curtis, William Curtis, 1746-99, Winchester, Warren & Son, 1941.

D.Arcy Power, 'English medicine and surgery in the fourteenth century', Selected Writings, 1877-1930. Oxford, Clarendon Press, 1931.

M.G.Davies, The enforcement of English apprenticeship, 1563-1642, Oxford, University Press, 1971.

A.G.Debus, The English Paracelsians, London, Oldbourne Press, 1965.; "Paracelsian medicine: Noah Biggs and the problem of medical reform" in A.G.Debus (editor) Medicine in seventeenth century England, London, University of California, 1974.

W.G.Dempster, 'Hunter the scholar', World Medicine, 1975, pp. 87-96.

K.Dewhurst, Dr. Thomas Sydenham (1624-1689), London, The Wellcome Historical Medical Library, 1966.;

The quicksilver doctor, Bristol, Wright, 1957.

Dictionary of national biography, XX XLV LII LX XIV XXVIII LIII VI XLVII X XXXIX.

T.Dimsdale, The present method of inoculating for the small-pox, 1767.

V.S.Doe (editor), The diary of James Clegg of Chapel-en-le-Frith, 1708-55, pt.I, 1708-36, Derbyshire Record Society, Matlock, 1978.

F.D.Drewitt, The life of Edward Jenner M.D., London, Longmans, 1933.

M.P.Earles, 'Cutting the tapestry', Pharm. Hist. 1972, 2: No.4.

A.Ellis, Penny university, London, Secker & Warburg, 1956.

- R.Ellis, 'Pharmacy in Stamford a century ago', Pharm. Hist., 1967, 1: 1: 4-8.
- F.G.Emmison, Elizabethan life-morals and the church courts, Chelmsford, Essex Record Office, 1973.;
- 'The relief of the poor at Eaton Socon, 1706-1834', Beds. Hist. Rec. Soc., 1933, 15: 1-99.;
- Tudor food and pastimes, London, Benn, 1964.
- W.V.Farrar et al., 'The Henrys of Manchester', Part I, 'Thomas Henry (1734-1816)', Ambix, 1973, 20: 183-208.
- Part 2, 'Thomas Henry's sons', Ambix, 1974, 21: 179-207.
- Part 4, 'Hydrocarbons and the gas industry', Ambix, 1975, 22: 186-204.;
- 'The Henrys of Manchester', Royal Institute of Chemistry reviews, 1971, 4: 1: 41.
- C.L.Feltoe (editor), Memorials of J.F.South, London, Murray, 1884.
- F.Ferchl, Chemisch-Pharmazeutische Bio und Bibliographiken, Mittenwald, A.Nemayer, 1938.
- J.B.Firth, Highways and byways in Leicestershire, London, Macmillan, 1926.
- D.M.Fisk, Dr. Jenner of Berkeley, London, Heinemann, 1959.
- M.W.Flinn, An economic and social history of Britain, 1066-1939, London, Macmillan, 1972, reprint.
- Foster, Alumni Oxoniensis, Oxford, University Press.
- R.H.Fox, Dr. John Fothergill and his friends, chapters in eighteenth century life, London, Macmillan, 1919.
- R.G.Frank, Jr., 'The John Ward diaries: mirror of seventeenth century science and medicine', J. Hist. Med., 1974, XXIX: 147-80.
- A.W.Franklin, "Clinical medicine", in A.G.Debus (editor) Medicine in seventeenth century England, London, University of California Press, 1974. pp. 113-145.
- J.F.Fulton, "The place of William Withering", in the Davis lecture committee (editor), Essays in the history of medicine, Chicago, 1965.
- A.T.Gaydon (editor) Victoria county history, Shropshire, Institute of Historical Research, 1973, 2.
- The gentleman apothecary: being a late and true story turned out of French, London, for H.Brome, 1670. In British Library, ref. 1081.1.2.
- Gentleman's Magazine, 1731, 1794.
- P.George, 'A Wisbech chyrurgion', Chem. & Drugg., 1955, 163: 713-5; P.George, 'Jeremy Cliff', Chem. & Drugg., 1954, 162: 211-3.
- M.D.George, London life in the eighteenth century, London, Kegan Paul & Co. 1930 2nd edn.
- F.W.Gibbs, 'George Wilson, (1631-1711)', Endeavour, 1953, 12: 182-185.
- S.Gibson (editor), Statuta antiqua Universitatis Oxoniensis, Oxford, The Clarendon Press, 1931.
- R.Gough & J.Nichols, 'The Gentlemen's Society at Spalding', in J.Nichols, Literary anecdotes of the eighteenth century, London, J.Nichols, 1812, 6: 1-162.
- J.Grier, A history of pharmacy, London, Pharmaceutical Press, 1937.

- R.T.Gunther, Early science in Oxford, Printed for the subscribers, 7, 4.
- R.W.T.Gunther (Editor), Further correspondence of John Ray, London, The Ray Society, 1928.
- F.Haley, 'The 300 year tale of a Kent pharmacy', Chem. & Drug., 1978, 210: 896.
- A.R.Hall, The scientific revolution, 1500-1800, London, Longmans, Green & Co., 1962.
- R.M. & P.A.Hall, 'Bicentenary of ^a Kimbolton pharmacy', Pharm. Journ., 1976, 217: 515-6.
- B.Hamilton, 'The medical professions in the eighteenth century', Econ. Hist. 1951, IV: 414-169.
- D.Harrington, 'The smallpox controversy continued' (letter), Local population studies, 1975, 14.
- 'Smallpox' (letter), Local population studies, 1977, 18.
- C.Haskins, Ancient trade guilds and companies of Salisbury, Salisbury, Bennett, 1912.
- W.C.Hazlitt, The livery companies of the City of London, London, Swan, Sonnenschein & Co., 1892.
- W.Herbert, The history of the twelve great livery companies of London. Newton Abbot, David & Charles facsimile, 1834.
- Historical collections of Staffordshire, William Salt Archaeological Society, 1935, vols. III, IV, V.
- The history of inoculation and vaccination, XVIIIth International Congress of Medicine, London, 1913, London, Burroughs Wellcome & Co., n.d.
- Hist. Mss. Comm. Report, 'The Rutland Mss.', 4.; 'The Cowper Mss. 2, 3.
- S.W.F.Holloway, 'Medical education in England, 1830-1858', History, 1964, XLIX: 299-324.
- A.R.Horwood & C.W.F.Noel, The Flora of Leicestershire and Rutland, Oxford, University Press, 1933.
- J.Ince, 'The old firm of Godfrey', Pharm. Journ., 1896, 56: 166-7.
- In sickness and in health, Bedfordshire record office pamphlet.
- R.W.Innes-Smith, English-speaking students of medicine at the University of Leyden, Edinburgh, Oliver and Boyd, 1932.
- W.A.Jackson, 'Antiques of Mander, Weaver and Co., Wolverhampton', Pharm. Hist., 1978, 8: 3: unpag.
- J.Jaramillo-Arango, The conquest of malaria, London, W.Heinemann, 1950.
- R.H.Jeffers, The friends of John Gerard, Falls Village, The Herb Grower Press, 1967.;
- 'Richard Pulteney, M.D. F.R.S. (1730-1801) and his correspondents', Proc. Linn. Soc. Ldn., 1960, 171: 15-26.
- C.H.Jenkinson (editor), Surrey apprenticeships, Surrey Record Society, 1929, vol. X. passim.
- P.Julien, 'Angibaud and the pastilles of Blois', Pharm. Journ., 1966, 196: 290-1.

- D.H.Kent, 'John Blackstone, apothecary and botanist (1712-53)', Watsonia, 1949-50, 1: 141-48.
- J.F.Kett, 'Provincial medical practice in England, 1730-1815', Journ. Med. Hist., 1964, 19: 17-29.
- R.W.Ketton-Cremer, Norfolk and the Civil War, London, Faber, 1969.
- L.S.King, The medical world of the eighteenth century, Chicago, University Press, 1958.
- A.Kippis (editor), Biographia Britannica, 1778, 2.
- W.Kirby, 'A 17th. century Midland pharmacy, Cope and Taylor of Derby', Pharm. Journ., 1935, 134: 566-8.
- E.Kremers & G.Urdang, History of pharmacy, Wisconsin, J.B.Lippincott, 1976, 4th edition (revised G.Sonnedecker).
- E.Lankester (editor), The correspondence of John Ray ..., London, The Ray Society, 1848.
- Leicestershire Poll of 1720. In British Library, ref. 10361. a.6.
- E.M.Leonard, The early history of English poor relief, Cambridge, University Press, 1900.
- P.Lewis, 'An Aldeburgh apothecary', Hist. of Med., 1971, 3:2: 23.
- B.Lillywhite, London Signs, London, Allen & Unwin, 1972.
- London Inhabitants within the walls, 1695, London, London Record Society, 1966, 2.
- A.Loathian Short, 'Charles Angibaud and his mortar', Pharm. Journ., 1966, 196: 287-8.;
- 'Corbyn, Stacey & Co., a note on their antiques'. Pharm. Journ., 1967, 199: 211.
- T.M.Lowry, Historical introduction to chemistry, London, Macmillan, 1926.
- F.Madan, The Gresleys of Drakelow, printed for the subscribers and the Wm. Salt Archaeological Society, 1898. Collections for a history of Staffordshire, volume 19 (i.e. vol.1, (N.S.))
- R.E.W.Maddison, 'Studies in the life of Robert Boyle, F.R.S.' Part V., Notes and Records Royal Society, London, 1953, 10: 159-187.
- F.Majadabay, The red rocks of Eddystone, London, Arrow Books, 1962.
- C.Marsden, Nottinghamshire, London, R.Hale, The County Book series, 1959.
- L.G.Matthews, History of pharmacy in Britain, Edinburgh, E.S.Livingstone, 1962.;
- 'Byways of pharmaceutical history', Pharm. Journ., 1963, 191: 631.;
- The antiques of perfume, London, G.Bell & Sons, 1973.;
- 'William Bullen and his Bulwarke', Pharm. Journ., 1961, 186:69-73.
- M. & B. Pharmaceutical Bulletin, 1956, 5:10: 90-94, 'An Apothecary's cash book'.
- Medical directory, 1861, 1862, 1863, 1865, 1873, 1882.
- S.Miall, A history of the British chemical industry, London, Benn. 1931.
- G.Miller, The adoption of inoculation for smallpox in England and France, Philadelphia, University of Pennsylvania Press, 1957.
- C.Morris, "Plague in Britain", in (editorial board), The plague reconsidered, Matlock, Local Population Studies Supplement No.4, 1977.

W.Munk, The roll of the Royal College of Physicians of London, London, Royal College of Physicians, 1878.

A.R.Myers, The household of Edward IV, Manchester University Press, 1959, Second edition.

J.Nichols, Illustrations of the literary history of the eighteenth century ..., London, J.Nichols, 1818, 3: 321-51.;
Literary anecdotes of the eighteenth century, London, J.Nichols, 1808, 1, 1812, 6: 1-162.;
The history and antiquities of the County of Leicester, London, J.Nichols, 1798, 2., 1804, 3.

W.L.F.Nuttall, 'Newspapers and their advertisements in the Commonwealth', History today, 1967, XVII: 460-67.

K.P.Oakley, Man the tool-maker, London, British Museum, 1963.

W.M.Palmer, 'Cambridgeshire doctors in olden times', Proc. Camb. Antiq. Soc., 1911, 15: 200 - 79.

G.H.Parry, 'Cerisy', Christleton, Chester, The Company of Mercers, Ironmongers, Apothecaries and Grocers, Bindings and Freedoms. (Manuscripts)

A.W.Patterson, 'The Fochaber papers', Pharm. Journ. 1960, 184: 213-16.

T.W.Peck & K.Wilkinson, William Withering of Birmingham, Bristol, J.Wright & Sons, 1950.

Pharmaceutical Journal. 1959, 183: 61, 'The sesquicentenary of Evans Medical Ltd'.

1964, 194: 651, 'Hastings and district'.

1968, 201: 523, 'Wholesalers bicentenary'.

1977, 218: 526, 'Message to pharmacy'.

Philosophical Transactions of the Royal Society.

11: 715.

12: 888-891, 1027.

29: 229-244.

39: 282-5.

40: 378-9.

44: 41-48., 707-49.

44: 773.

47: 253.

48: 201-16.

49: 477.

52: 629.

54: 201.

R.Pilkington, Robert Boyle, Father of chemistry, London, Murray, 1959.

R.Plot, The natural history of Staffordshire, Oxford, The Theatre, 1686.

Post Office street directory, London, Kelly & Co., 1862.

Post Office trades directory, London, Kelly & Co., 1862, 1875.

Post Office commercial directory, London, Kelly & Co. 1871.

F.N.L.Poynter (editor) The journal of James Yonge, 1647-1721, London, Longmans, 1963.

F.N.L.Poynter & W.J.Bishop, 'A seventeenth century doctor and his patients: John Symcott's', Beds., Hist. Rec. Soc. Pubn., 1951, 31: Introdn.

R.B.Pugh (editor), Victoria county history, Staffordshire, Institute of Historical Research, 1959, 5.

F.C.Pybus, 'The company of barber surgeons and tallow chandlers of Newcastle-on-Tyne', Proc. Royal Soc.Med., 1928.

S.X.Radbill, "Pediatrics", in A.G.Debus (editor) Medicine in seventeenth century England, London, University of California, 1974, pp. 237-283.

C.Ragg, Memories of Edmonton Green, Edmonton Hundred Historical Society, Occ. paper No. 2. (old series).

A.Raistrick, Quakers in science and industry, Newton Abbot, David & Charles, 2nd edn. 1968.

Quakers in science and industry, Newton Abbot, David & Charles, 1950.

H.B.Rasmussen, 'Hans Christian Oersted, 1777-1851', Chem. & Drugg., 1951, 155: 309-10.

L.J.Rather, "Pathology at mid-century", in A.G.Debus (editor), Medicine in seventeenth century England, London, University of California, 1974.

C.E.Raven, English naturalists from, Neckham to Ray, Cambridge, University Press, 1947.

S.W.Rawlings (editor) Visitations of London, 1568, Harl. Soc. Pub. 1963, 109-10.

W.J.Reader, Professional men. The rise of the professional classes in nineteenth century England, London, Weidenfeld & Nicholson, 1966.

C.F.Richard, 'Smallpox inoculation deaths' (letter); Local population studies, 1977, 19.

S.I.Richardson, Edmonton Poor Law Union, Edmonton Hundred Historical Society, 1965.

A.H.T.Robb-Smith, "Cambridge Medicine", in A.G.Debus (editor), Medicine in seventeenth century England, London, University of California, 1974.

R.S.Roberts, 'Personnel and practice of Medicine in Tudor and Stuart England', Part I, The provinces Med. Hist., 1962, 6: 363-76.

Part II, London, Med. Hist. 1964, 8: 217-229.

"The early history of the import of drugs into Britain", in F.N.L.Poynter (editor), The evolution of pharmacy in Britain, London, Pitman Med. Publishing Co., 1965.

'Current problems' seventeenth century parallel', Pharm. Journ., 1969, 202: 38.

E.Robinson, 'Thomas Beddoes, M.D., reader in chemistry in the university of Oxford, 1782-92', Ann. Sci., 1955, 11: 137.

H.W.Robinson & W.Adams (editors), The diary of Robert Hooke, London, Taylor & Francis, 1935.

H.Rolleston, 'History of medicine in the city of London', Annals Med. Hist., 1941, 3rd series, 3: 1-17. ; 'The two Heberdens', Ann. Med. Hist., NS.1933, 5:409-

C.A.Ronan, Edmond Halley, genius in eclipse, London, Macdonald, 1970. 27

A.Rook, 'Cambridge medical students at Leyden', Med. Hist., 1973, pp.256-65.

M.Rowe & G.Trease, 'Thomas Baskerville, Elizabethan apothecary of Exeter', Trans. Brit.Soc. Hist. Pharm., 1972, 1: 3-28.

J.P.Rylands (editor), Visitations of Dorset, 1623, Harl Soc.Pub. 1885, XX.

P.A.Saccardo, 'Petiver's exsiccatae', Jnl. of Botany, 1899, 37: 227.

- H.Schelenz, Geschichte der Pharmazie, Berlin, Julius Springer, 1904.
- M.Schofield, 'The versatile Robert Dossie', Pharm. Journ., 1967, 199: 406-7.
 'Early French pharmacists', Pharm. Journ., 1945, 155: 13-14.
 'A forgotten Russian pharmacist', Pharm. Journ., 1946, 157: 135.
 'Klaproth: pharmacist and famous analyst', Pharm. Journ., 1946, 157: 376.
 'Joseph Louis Proust, 1754-1826', Pharm. Journ., 1954, 175: 69-70.
 'Vauquelin, the versatile chemist, 1763-1829', Pharm. Journ., 1963, 190: 453-4.
 'Friedrich Stromeyer', Chem. & Drugg., 1967, 188: 160.
- A.D.Selleck, Cookworthy, 1705-80, and his circle, Plymouth, Baron Jay, 1978.
- R.R.Sharpe, (editor) Calender of the Letter Books ... of the archives of City of London, London, 1889-1912, Letter Book G. Letter Book I.
- S.Shaw, The history and antiquities of Staffordshire, Wakefield, F.P. Publishings Ltd. 1976, reprint of 1798 edn., 1.
- A.W.Sheldrick, 'The dovehouses of Hertfordshire and the saltpetre industry', Hertfordshire Countryside, 1970, 24: 28-9.
- J.Simon, 'The two John Angels' Trans. Leics. Arch. & Hist. Soc., 1955, 31: 35-50.
- F.Simpson, Chester city gilds: the Barber-Surgeons' Company, Chester, G.R.Griffith, 1911.
- H.M.Sinclair, "Oxford medicine" in Medicine in seventeenth century England, London, University of California, 1974.
- C.Singer et al., A history of technology, Oxford, Clarendon Press, 7 vols. 1954-78.
- D.W.Singer, 'Sir John Pringle and his circle', Ann. Sci., 1948-50, 6: 127-180.
- J.F.South, Memorials of the craft of surgery, (editor) D'Arcy Power, London, 1886
- C.H.Spiers, 'William Thomas Brande, leather expert', Ann. Sci., 1969, 25: 179-201.
- P.Stechl, 'Casper Neumann : an early teacher of pharmaceutical chemistry', Pharm. in Hist., 1970, 12: 51-56.
- Statutes of the Realm, London, 1810, Vol 1., 1817, Vol. 3.
- M.Stiles, "The Quakers in pharmacy", in F.N.L.Poynter (editor) The evolution of pharmacy in Britain, London, Pitman Medical Publishing Co., 1965, pp. 113-129.
- Surgeons' bill now before the House of Commons. Bill read 24 January 1690.
In British Library, ref. 777K. 16(15).
- M.E.Swan & K.R.Swan, Sir Joseph Wilson Swan, inventor and scientist, Newcastle-upon-Tyne, Oriel, 1966, reprint.
- G.Tergit, Flowers through the ages, London, C.Skilton, 1972, reprint.
- J.L.Thornton, John Abernethy, privately printed, 1953.
- W.A.Tilden, Famous chemists, the men and their work, London, Routledge, 1921.

T.F.Tout, The place of the reign of Edward II in English history, Manchester, University Press, 1936, 2nd edition.

C.Townsend, 'Apothecaries, druggists and pharmacists, past, present, and future'. Pharm. Journ., 1870, 11: 608-616, 690-698.

R.R.Trail, 'Physicians and apothecaries in the seventeenth century', Pharm. Journ., 1962, 188: 205-9.

G.E.Trease, Pharmacy in history, London, Baillière, Tindall & Cox, 1964.

'The 'spicer-apothecary' of the Middle Ages',

The future pharmacist, 1957, 26: 56.;

'Manufacture of apothecaries' tokens', Pharm. Journ., 1966, 197: 323-4.;

Presidential address to the conference on the evolution of British pharmacy held at Nottingham, in F.N.L.Poynter (editor), The evolution of British pharmacy, London, Pitman Medical Publishing Co., 1965.

A.Treneer, The mercurial chemist, London, Methuen, 1963.

G.M.Trevelyan, English social history, London, The Reprint Society, 1948.

D.Turner (editor), Extracts from the literary and scientific correspondence of Richard Richardson, M.D., F.R.S., Yarmouth, 1835.

D.Turner & L.Dillwyn, Botanists' guide through England and Wales, London, Philips & Fardon, 1805.

S.H.Twining, The house of Twining, 1706-1956, London, R. Twining, 1956.

G.Unwin, The guilds and companies of London, London, Frank Cass, 1963, 4th edn.

D.G.Vaisey (editor), 'Probate inventories of Lichfield and districts, 1568-1680', Collections for a history of Staffordshire, 4th series, Staffordshire Record Society, 1969, 5.

Venn, Alumni Cantabrigienses, 2.

A.Wagner, English ancestry, Oxford, University Press, 1961.

J.W.Walker (transcriber and editor), Hunter's Pedigrees, Harleian Society, 88.

C.Wall. The history of the Surgeons' Company, 1745-1800, London, Hutchinson's Scientific & Technical publications, 1937.

C.Wall, H.C.Cameron & E.A.Underwood, A history of the Worshipful Society of the Apothecaries of London, Oxford, University Press, 1963.

G.T.Warner, Landmarks in English industrial history, London & Glasgow, Blackie, 1934.

G.M.Watson, "Some eighteenth century trading accounts", in F.N.L.Poynter (editor) The evolution of pharmacy in Britain, London, Pitman Med. Pub. Co., 1965, pp.45-77.

A.White, History of the Loughborough Endowed Schools, Loughborough, Loughborough Grammar School, 1969.

T.D.Whittet, 'The apothecary in English provincial guilds', The West African pharmacist, 1963, 5: 31-3.;

'Samuel Pepys and his apothecaries', M. & B. pharmaceutical bulletin, Dagenham, May & Baker Ltd., 1967, 16: 40-43.;

'The Liverpool Apothecaries' Company', Chem. & Drugg. 1965, 184: 40-1.;

- T.D.Whittet, The apothecaries in the Great Plague of London, 1665,
(contd.) Epsom, A.E.Morgan Publications. 1971.;
'Some contributions of pharmacists to plant chemistry'
Aust. J. Hosp. Pharm., 1973, 3: 13-20.;
'Some contributions of pharmacists in analysis',
Pharm. Journ., 1973, 211: 536-41.
- T.D.Whittet and J.G.L.Burnby, Plague, pills and surgery, the story of the
Bromfields, Enfield, Edmonton Hundred Historical Society, 1975.
- T.D.Whittet & M.Newbold, 'Apothecaries in the diary of Samuel Newton,
alderman of Cambridge', Pharm. Journ., 1978, 221: 115-18.;
'Some eminent Cambridge apothecaries', Trans. Brit. Soc. Hist. Pharm., 1977,
1: 4: 203.
- W.P.D.Wightman, Science and the renaissance, Aberdeen, University Press, 1962.
- T.S.Willan, An eighteenth century shopkeeper, Abraham Dent of Kirkby Stephen,
Manchester, University Press, 1970.
- A.J.Willis (editor), Canterbury licences (general) 1568-1646, Chichester,
Phillimore, 1972.
- C.Wilson, England's apprenticeship, 1603-1763, London, Longmans, 1971.
- R.E.Wilson, A history of the Sheffield Smelting Company Ltd., 1760-1960,
London, E.Benn, 1960.
- A.L.Wood, 'Hemel Hempstead and its people during the seventeenth and
eighteenth centuries', in Susan Yaxley (editor), History of Hemel Hempstead,
Borough of Hemel Hempstead, 1973.
- J.H.Wylie, History of England under Henry IV, London, Longmans & Co.,
1884-98, 4.
- S.Yaxley, 'The sixteenth century, in S.Yaxley (editor), History of
Hemel Hempstead, Borough of Hemel Hempstead, 1973, pp. 37-55.
- A.S.Young, Annals of the Barber-Surgeons' of London, London, Blades,
East & Blades, 1890.
- L.Z.Zimmermann, "Surgery", in A.G.Debus (editor), Medicine in seventeenth
century England, University of California Press, 1974, pp.49-69.
- D.Zuck, 'The provincial apothecary', (letter), Pharm. Hist., 1978,
8: 2: unpag.

PAGES
EXCLUDED
UNDER
INSTRUCTION
FROM
UNIVERSITY